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Damages Calculations in Intellectual Property Cases in Canada

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1.0 Introduction

While the focus of this article is damages in patent cases, the principles generally apply in trade-mark and copyright cases as well.[1] A damages award focuses on the loss suffered by the plaintiff. Damages principles in intellectual property cases are for the most part consistent with the modern understanding of general tort principles. This was emphasized by the English Court of Appeal in *Gerber Garment v. Lectra:* Infringement of a patent is a statutory tort; and in the ordinary way one would expect the damage recoverable to be governed by the same rules as with many or most other torts. We were referred to Halsbury's Laws of England ... to establish the elementary rules (1) that the over riding principle is that the victim should be restored to the position he or she would have been in if no harm had been done, and (2) that the victim can recover loss which was (i) foreseeable, (ii) caused by the wrong, and (iii) not excluded from recovery by public or social policy. The requirement of causation is sometimes confused with foreseeability, which is remoteness.[2]

Damages are typically measured by the difference between:

(i) the financial position of the plaintiff as it would have been *but for* the infringement (i.e., if the infringement had not occurred); and

(ii) the *actual* financial position of the plaintiff reflecting the negative consequences of the infringement.

The plaintiff bears the burden of proving its loss, and damages are compensatory, not punitive.[3]

1.1 Basic Principles

1.1.1 Causation and the "But For" Test

In summary, the plaintiff is presumptively entitled to all and only those losses in fact caused by the infringement.

The methods of calculating damages depend heavily on how the plaintiff would have exploited the intellectual property. As a first step, a court must determine the nature of the relevant market and a holistic understanding of its economics (often referred to as the "operating reality") in order to determine the "but for" position. This in turn enables the restoration of the plaintiff to where it would have been but for the infringement.

[1] Although damages for copyright infringement are "at large" and technically do not need to be specifically proved in detail by the plaintiff, as a practical matter the plaintiff usually should attempt such proof.

[2] *Gerber Garment Technology v. Lectra Systems Ltd.,* [1997] R.P.C. 443, at 452 (C.A.), per Staughton L.J.

[3] These are general tort principles. In the patent context, see Lord Wilberforce in *General Tire v. Firestone,* [1976] R.P.C. 197, at 212 (H.L.), citing *Pneumatic Tyre v. Puncture Proof Pneumatic Tyre* (1899), 16 R.P.C. 209, at 215 (C.A.): "There are two essential principles in valuing that claim: first, that the plaintiffs have the burden of proving their loss: second, that the defendants being wrongdoers, damages should be liberally assessed but that the object is to compensate the plaintiffs and not punish the defendants."

Where the conclusion of the operating reality analysis is that "but for" the infringement the plaintiff would have made the sales in question, the plaintiff may be awarded lost profits on the sales it has lost. Where the plaintiff does not typically exploit the intellectual property, or cannot prove that it would have made the lost sale, the appropriate remedy is a reasonable royalty determined notionally for purposes of computing damages. Likewise, if the parties cannot establish lost profits or a standard licensing policy, the default remedy is the reasonable royalty, which recognizes that every sale by the infringing party is an illegal sale.

This scheme is diagrammed in Figure 1.

Figure 1 Scheme for Damages

Method: determine the *operating reality* of the plaintiff as it would have been but for the infringement

OPERATING REALITY

1. If plaintiff would have exploited through manufacture and sales →	Lost profits	Section 2.0
2. If plaintiff would have licensed at a given rate →	Apply royalty (effectively the reasonable royalty)	Section 3.0
3. If operating reality of plaintiff is not definitive (parties cannot prove 1 or 2) or use does not damage plaintiff →	Reasonable royalty	Section 3.0

The "but for" requirement, which establishes causation, is central in intellectual property damages. Only the harm caused by an infringement is compensable as damages. Damages are measured by the difference between the actual position of the plaintiff and the position of the plaintiff but for the infringement: the position of the plaintiff had the infringement not occurred.

The “but for” test requires an answer to the hypothetical question of what would have happened if the defendant had not infringed.[4] The challenge in assessing what would have happened is that the market for products and services is dynamic, subject to the forces of competition and continuing innovation, and fluctuating in response to advertising, distribution, microeconomic factors internal to the business, and macro factors external to the business. The notion that the plaintiff, defendant and other market participants would have continued in exactly the same manner as they were just prior to the infringement is rarely sound. It is reasonable however to start with the market operating reality prior to the infringement and adjust it for how the market would notionally perform in the hypothetical “but for” scenario. Only well-thought-out models and related assumptions can simulate the “but for” result.

1.1.2 Relevance of Non-Infringing Alternatives

It is not just the plaintiff’s alternatives and strategies that affect the “but for” scenario; often the defendant’s or other market participants’ hypothesized behavior but for the infringement will also affect the plaintiff’s “but for” profits. For example, if the defendant was an established company with a good reputation and a sound product aggressively entering the market, it may be reasonable to infer that the defendant would have captured a portion of the market even without an infringing feature,[5] while a new company without a reputation would have encountered more difficulty in making sales in the absence of an infringing feature.[6]

As a second example, it will typically be necessary to consider the non-infringing alternatives available to the defendant at the time of the infringement in determining what the defendant would most likely have done but for the infringement. A defendant with a very close non-infringing substitute available to it might well have captured a substantial part of the market with the non-infringing product that it in fact captured with the infringing product. On the other hand, if there is no close non-infringing substitute, the defendant might not have entered the market at all. The plaintiff’s “but for” profits would be quite different in the two cases.

The 1888 decision of the House of Lords in *United Horse-Shoe & Nail Co. v. Stewart & Co.*[7] addressed this point. The case is often cited (for example, in *Domco Industries*[8]) for the principles that damages are computed on the assumption that

[4] See *Cadbury Schweppes v. FBI Foods,* [1995] 1 S.C.R. 142, at 73.

[5] See *Meters Ltd. v. Metropolitan Gas Meters Ltd.* (1910), 27 R.P.C. 721, at 731 (Ch. D.) (*“Meters trial”*); aff’d. on this point, *Meters Ltd. v. Metropolitan Gas Meters Ltd.* (1911), 28 R.P.C. 157 (C.A.) (*“Meters appeal”*).

[6] See *Catnic Components v. Hill & Smith,* [1983] F.S.R. 512, at 522 (Pat. Ct.), per Falconer J.

[7] *United Horse-Shoe & Nail Co. v. Stewart & Co.* (1888), 5 R.P.C. 260, at 264, L.R. 13 App. Cas. 401 (H.L.); *Meters, supra* note 5.

[8] See *Domco Industries Ltd. v. Armstrong Cork Canada Ltd.* (1983), 76 C.P.R. (2d) 70, at 92 (F.C.T.D. – Prothonotary); var’d. (1986), 10 C.P.R. (3d) 53 (F.C. T.D). See also *Jay-Lor International Inc. v. Penta Farm Systems Ltd.* 2007 FC 358, 59 C.P.R. (4th) 228, at 115, citing *Domco* for this proposition. However, it was clear on the facts in *Jay-Lor* that the defendant could not have competed as effectively without infringing.

the infringer had not entered the market at all,[9] and that it is not relevant that the plaintiff would have been equally hurt by the defendant if the defendant had produced non-infringing products. On this point, however, *United Horse-Shoe* may be inconsistent with modern Canadian cases. The difficulty with the decision is that the defendant's non-infringing alternatives are clearly relevant in fact to what would most probably have happened but for the infringement. Ignoring this factor in a lost profits-only award is inconsistent with the general principle that the plaintiff is to be put in the position it would have in fact been in but for the infringement, as best this can be determined.[10]

The plaintiff in *United Horse-Shoe* held two patents related to machinery to save costs in the manufacture of horseshoe nails. Infringing nails had been made by the defendants. However, the evidence indicated that the savings from the use of the inventions subject to the first patent was small,[11] while the second patent was not practically useful and had been abandoned after a trial period.[12] The defendant argued that it would therefore have made equally competitive nails without infringing, by simply using the same methods it had previously used, and so would have made the same sales in any event. If this was true, the plaintiff's sales but for the infringement would have been exactly the same as they were in fact, and so the plaintiff would have no lost profits from lost sales.[13] The Lord Ordinary at first instance held for the plaintiff.[14] On appeal, the Scottish Court of Sessions reversed and rejected the plaintiff's claim for damages for lost sales, noting that on the facts it was established that the defendant would have competed equally well without infringing.[15]

[9] See Collier J., *Domco, ibid,* at 61-62.

[10] See U.S. Federal Trade Commission, "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition", (March 2011) at p. 150 noting that "[t]o accurately replicate the market reward that the patentee would have earned by practicing its invention, the lost profits damages calculation must account for competition that the patentee's product would have faced if the infringer had sold a non-infringing alternative that did not incorporate the patented technology."

[11] *United Horse-Shoe and Nail Co, Ltd. V. John Stewart & Co.* (1886), 14 Court Sess. Cas. (4th) 266, at 275.

[12] *Ibid.*

[13] In modern law, the plaintiff would therefore be eligible for a reasonable royalty on the infringing sales.

[14] The Lord Ordinary ruled for the plaintiff, on the basis of a legal presumption that a patented invention must necessarily be useful. The Lord Ordinary noted that on the facts it appeared that the patented inventions did not provide a practical advantage, but he was of the view that because the patent was admitted to be valid, it must be presumed as a matter of law that the invention was indeed useful in saving waste, notwithstanding the evidence to the contrary. Court Sess. Cas., *supra* note 11, at 268.

[15] Per Lord Adam, ibid., at 276. However, the defendant did realize a small cost saving through the use of the invention. The Court of Session would have awarded £50 as the difference between the defendant's profits with and without the use of the invention. This is an application of the "differential profits" approach to an accounting of profits: see Duff & Phelps Canada Limited Financial Litigation Support Group, Norman V. Siebrasse, and Alexander J. Stack, "Accounting of Profits Calculations in Intellectual Property Cases in Canada" (June 2012).

The House of Lords restored the award of the Lord Ordinary. The main basis for the House of Lords decision was that it was entirely irrelevant whether the defendant could in fact have competed successfully by non-infringing means.[16] Lord Halsbury remarked, "[W]hat does it matter if it is ever so much established that the loss which the pursuers have sustained by the unlawful act of the defenders might also have been sustained by them under such circumstances as would give the pursuers no right of action? Your Lordships have to deal with the facts as they exist."[17] Similarly, Lord Macnaghten stated, "It appears to be beside the mark to say that the respondents might have arrived at the same result by lawful means, and that, without infringing the appellants' rights, they might have produced a nail which would have proved equally dangerous a rival."[18]

Thus, in *United Horse-Shoe* it was found that, but for the infringement, the defendant would have competed successfully and made the same sales by non-infringing means; yet this was held to be irrelevant. Is this reconcilable with the modern "but for" approach?

The assessment of what hypothetically would have happened if the defendant had not infringed clearly includes the effects of third-party non-infringing competition. Why should it not include non infringing competition by the defendant? The fundamental inquiry is what would most probably have happened but for the infringement. This general principle provides no reason for distinguishing between the defendant and third parties.

The Supreme Court of Canada also looked to the hypothetical actions of the defendant in *Monsanto Canada Inc. v. Schmeiser,* an accounting of profits case.[19] In *Schmeiser,* the defendant grew herbicide-resistant canola that infringed the plaintiff's patent.[20] However, there was no evidence to show that the defendant took advantage of the herbicide resistance by spraying, and he sold the canola seeds for crushing rather than as seed, so the sale price of the infringing canola was no higher than that for unpatented seed.[21] The plaintiff argued that it was entitled to all of the defendant's actual profits regardless of whether the defendant gained material advantage from the infringement. However, the Supreme Court held that the plaintiff was entitled only to the difference between the profits the defendant actually made and those that he would have made but for the tort. On the facts, the defendant

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[16] Lord Watson also stated that "if these parts are not commercially useful... it would necessarily follow, either that the patent was void or that there was no substantial infringement which could entitle the patentee to an interdict." *United Horse-Shoe, supra* note 7, at 267.

[17] *Ibid.,* at 409. Similarly, also per Lord Halsbury, *ibid.,* "I think it is nothing to the purpose to shew, if it is shewn, that the defenders might have made nails equally good and equally cheap without infringing the pursuers' patent at all."

[18] *Ibid.,* at 416. Lord Watson's decision might be said to turn on the lack of proof of an alternative non-infringing process of equal efficacy (see his remarks at 414), but he did remark (at 412) that the principle in Mowry v. Whitney was "manifestly erroneous."

[19] *Monsanto Canada Inc. v. Schmeiser,* 2004 SCC 34 [2004] 1 S.C.R. 902 *(Schmeiser)* at 102.

[20] Specifically, the plaintiff's patent covered genes that conferred herbicide resistance on the adult plant.

[21] *Monsanto Canada Inc. v. Schmeiser* (2001), 12 C.P.R. (4th) 204, at 121 (F.C.T.D.); (2002), 21 C.P.R. (4th) 1, at 78 (F.C.A.).

would have made identical profits if he had not infringed, and the plaintiff was awarded zero profits.

United Horse-Shoe and *Schmeiser* raise the same basic issue: how to determine whether "profits"—profits of the defendant in an accounting of profits, lost profits of the plaintiffs in damages—are caused by the infringement.[22] Following *Schmeiser*, in a damages case the possible non-infringing alternatives available to the defendant are relevant in determining causation and calculating the "but for" loss.

The decision of the U.S. Court of Appeals for the Federal Circuit in *Grain Processing Corporation v. American Maize-Products Company* case provides a further illustration and is, notably, a damages case rather than an accounting of profits. The plaintiff and defendant were the only significant suppliers of the product in question. When the defendant first entered the market its product was found to infringe. The defendant subsequently but unsuccessfully changed its process three times in an attempt, in part, to avoid infringing. Finally, a fourth process, which took only two weeks to perfect and begin to implement on a production scale, was then developed that did not infringe the patent. The evidence indicated that the only reason the fourth process had not been adopted previously was because the defendant believed each of the previous processes it had implemented also did not infringe.

The Court of Appeal upheld the District Court's decision that the fourth process could have been made available, and that it was an acceptable substitute for the claimed invention. It was irrelevant that the fourth process was not actually in existence at any time during the period of infringement because the evidence showed that the fourth process was easily and readily implemented, and that it would have been used by the defendants "but for" the findings of infringement.

1.1.3 Apportionment

In some cases it is plausible that the defendant's sales of the infringing items are not due entirely to the infringement, as, for example, when the defendant has made substantial improvements to the product. In such cases, it is established in the context of the accounting of profits that an apportionment of profits may be made when justified by the facts.[23] It appears that the same principle may be applied in the context of damages.[24] Where it is established that the defendant's efforts contributed to the sales but it is impractical to attribute any specific sales to that effort, apportionment may be appropriate.[25]

However, as stated by Snider J. in *Jay-Lor v. Penta,* "apportionment is generally not available to limit the damages payable by the defendant."[26] The need for

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[22] *Grain Processing Corporation v. American Maize-Products Company* (1999), 185 F. 3d 1341 at 1350-1351 (Fed. Cir.).

[23] See "Accounting of Profits in Intellectual Property Cases in Canada", *supra* note 15.

[24] *Jay-Lor, supra* note 8, at 190-99.

[25] *Jay-Lor, ibid.,* at 196, approving the possibility of apportionment, though not applying it on the facts.

[26] *Jay-Lor, ibid.,* at 123.

apportionment will be infrequent if there is appropriate consideration of the next best non-infringing alternative. In essence, apportionment and consideration of the best non-infringing option serve the same purpose: limiting damages to the damage caused by the infringement.

If an apportionment is made, it is important to avoid double counting. If the estimate of lost sales excludes sales that were made on the basis of the defendant's contribution, either on the basis of an assessment of individual sales, or on a market share approach, it is not appropriate to further reduce the lost profits from sales that would have been made by the plaintiff. The onus is on the defendant to prove the basis for the apportionment.[27]

1.1.4 Other Limits on Recovery: Remoteness and Foreseeability

Causation is not the only limit on recovery. Losses that are in fact caused by an infringement may nonetheless be unrecoverable if they are too remote. As the quotation from *Gerber v. Lectra* indicates, in modern tort law "remoteness" is not a test but a label for the conclusion that losses that satisfy the causation requirement should nonetheless be excluded. A conclusion that a loss is too remote is always based on some reason of "public or social policy"; a simple assertion that a loss is "too remote" is not usually accepted as persuasive.

The foreseeability requirement (a form of remoteness) is the best established limit on recovery in tort law apart from causation.[28] Generally, however, it plays little role in intellectual property cases, since it is only the nature of the loss, and not its extent, that needs to be foreseeable. Because the nature of the typical loss in intellectual property cases—lost sales or licensing revenues—is generally foreseeable,[29] the foreseeability requirement is usually easily satisfied.[30]

In *Gerber v. Lectra,* the Patent Court and the English Court of Appeal extensively discussed remoteness in patent cases, holding that while remoteness does operate in intellectual property cases separately from questions of causation or foreseeability, it should not be based on an amorphous fear of "extending the monopoly of the patent":

> Given that one can foresee these losses, why should the law not provide that the defendant must recompense the plaintiff? And all the more so where the defendant gets a corresponding benefit from his wrong. If that benefit were large enough it might pay the defendant to commit the wrong. ...

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[27] *Jay-Lor, ibid.*

[28] As the Court of Appeal noted in *Gerber v. Lectra, supra* note 2, the foreseeability requirement is in principle a form of remoteness, but it is so well established that it is normally treated as an independent requirement rather than as a species of remoteness. Accordingly, for convenience we will use "remoteness" to mean remoteness issues other than foreseeability.

[29] John G. Fleming, The *Law of Torts,* 9th ed. (Sydney: Law Book Company, 1998), 240.

[30] However, remoteness may be a live issue with respect to more unusual damages claims: see the discussion "Losses of Subsidiary Companies" in section 2.6 below.

> I think this is a very powerful policy reason for holding that these ancillary damages [springboard and convoyed sales damages] are recoverable. The supposed counter-argument is that articulated by Goff L.J.: that one is thereby setting up a wider monopoly than that provided by the patent. However, upon analysis one can see that this is not really so. The patentee has no monopoly in any of these matters. Anyone could have made peel-apart cameras or film, or sell service or parts, or sell post-expiry. There is no question of setting up a monopoly at all - there is only an investigation into the effect of the invasion of one.[31]

1.1.5 Mitigation

The principle underlying damages calculations applies in considering mitigation i.e. it is to put the plaintiff back into the same economic position it would have been in but for the infringement. Where the plaintiff has undertaken activities that it would not have undertaken in the "but for" scenario then the earnings that it has obtained as a result of those activities would be deducted from the damages otherwise calculated.

The cause of the company's ability to have undertaken those activities will depend on the circumstances but may include, for example:

(i) The existence of manufacturing capacity that would otherwise not have been available had the plaintiff been manufacturing the product to which the infringement related;

(ii) Diversion of marketing resources to alternative products with resultant increased sales which would not have occurred in the "but for" scenario; and

(iii) The introduction of "follow on" or alternative products which, had the plaintiff continued with the infringed product, it would not have undertaken.

Mitigation strategies require an intimate understanding of the strengths, weaknesses and circumstances of the specific plaintiff as they were at the time of the loss.

Most of the considerations relevant to the determination of "but for" scenarios are relevant to the determination of appropriate mitigation strategies and the quantification thereof. The emphasis here is on "appropriate". Development of the "but for" scenarios and the mitigation scenarios each inform the other and no damage quantification is complete without addressing mitigation alternatives.

1.1.6 The Use of Hindsight

When determining the course of action that the plaintiff would have undertaken in the "but for" world, the use of hindsight is not permitted. Specifically, when considering whether the plaintiff would have manufactured and sold the product itself or licensed it, only the information available to the plaintiff at the commencement of the breach should be considered. The parties cannot argue for a

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[31] *Gerber Garment Technology v. Lectra Systems,* [1995] R.P.C. 383, at 400 (Pat. Ct.); largely aff'd supra note 2 (C.A.).

course of action that hindsight shows would have been most advantageous, if all considerations known at the time pointed in another direction.

In such cases, the answer is properly inferred from the operating reality of the rights holder. Actual historical patterns or established strategy are important evidence, of course, but business plans, strategic plans, budgets, mission and vision statements, and the like must also be considered. With early-stage technology companies, one must rely much more on "what if" scenarios.

Though the construction of the "but for" position recognizes that the plaintiff would not have had benefit of hindsight in making decisions of the above described nature, in some cases, information based on hindsight may provide the court with the best evidence as to what course of action the plaintiff would have followed or information it would have known.[32]

When determining the results under the "but for" scenario, use of hindsight is permitted. For example, if a licensing agreement would have been entered into but for the infringement, the royalty rate that would have been charged is based on a hypothetical negotiation carried out with only the information available to the parties at the time of the breach – without the use of hindsight. However, the sales on which the royalties are payable are the actual sales during the period of infringement - determined with the benefit of hindsight. [33]

1.1.7 Taxation

Generally, an award of damages in intellectual property will be taxable to the recipient as normal business income[34] and payment of the damages award will be deductible to the defendant. However, it may happen that the nature of the award makes it a capital receipt and, hence, the amount will be subject to capital gains.

As a practical matter, we suspect punitive damages are also regularly deducted and taxed, respectively, by the defendant and the plaintiff. However, there is academic thinking to the contrary.

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[32] See *Jay-Lor, supra* note 8, at 154, in which Snider J. accepted the plaintiff / manufacturer's actual gross margin as the best evidence presented by the parties of what the defendant would have predicted its own manufacturing margin to be, in circumstances were the defendant did not have a manufacturing history of its own, and the plaintiff's actual gross margin is the one that the defendant could reasonably have calculated on a rough basis.

[33] In general tort law, see Major J.'s discussion in *Athey v. Leonati,* [1996] 3 S.C.R. 458, at 31-32 (under the heading "Independent Intervening Events"). Major J. cites the House of Lords in *Jobling v. Associated Dairies Ltd.,* [1981] 2 All E.R. 752 (H.L.). In *Jobling,* a plaintiff had suffered a back injury due to the negligence of the defendant. Damages were reduced because an unrelated spinal disease that developed after the injury would have proved totally disabling within a few years. Thus, hindsight was used to determine that the plaintiff would have become disabled even but for the accident. (On the facts in *Athey,* where the plaintiff's back was negligently injured in two traffic accidents by the defendants, and the plaintiff subsequently suffered a herniated disc during recovery, the Supreme Court ruled that there was no applicable independent intervening event.)

Consequently, damages are generally computed on a "pre-tax" basis – they are not reduced for income taxes.

1.1.8 The Value to Owner Principle

The "but for" damages concept often differs significantly from the concept of "fair market value" used in business valuation.

Fair market value is generally defined as the highest price available in an open and unrestricted market between informed, prudent parties acting at arm's length and under no compulsion to act, expressed in terms of money or money's worth. The key differentiator between fair market value and damages is that fair market value represents the price that would be negotiated between notional parties who are informed and acting prudently at arm's length. Damages however are unique to the specific plaintiff.

The notion of damages is akin to that of "value to owner", in which the particulars of the subject party are assessed. The relevant cash flows in a "but for" damages analysis are those which would otherwise have been earned by the specific plaintiff in the matter at hand, not some notional party in the marketplace. As a result, the relevant cash flows would be those which takes into account execution by the specific plaintiff, not a notional one, and the discount rate applied to those cash flows would be that which takes into account the specific execution risk of the plaintiff, not the execution risk of the market or a notional plaintiff.

This principle is not unique to intellectual property cases but applies to the general law of damages.

As earlier noted, with commodity style goods and more generic intellectual property, in some cases the fair market value of an asset is the same as its value to owner. Notwithstanding how important specific intellectual property might be to a specific plaintiff, if an equally effective alternative is readily available then the market price or fair market value of the alternative is the compelling measure of value in most cases in that it acts as a "ceiling" to the price that a prospective buyer would be willing to pay.

2.0 Lost Profits from Exploitation

A plaintiff is entitled to recovery of its lost profits. If the plaintiff would usually have exploited the invention by selling the product itself, the plaintiff can claim damages for lost sales.[35] Speaking broadly, lost profits are calculated as the foregone profit on the plaintiff's lost sales plus the diminished profit on the plaintiff's actual sales.

[34] See Canada Revenue Agency Income Tax Interpretation Bulletin IT-467R2.

[35] If the patent is a process patent, the plaintiff will generally be able to claim damages for lost sales of products made by the machine: see *Colonial Fastener Co. v. Lightning Fastener Co.,* [1937] S.C.R. 36, at 26-27.

Generally heads of damage available to the plaintiff could comprise:

(i) lost profits on sales that would have been captured by the plaintiff if the defendant had not infringed;

(ii) lost profits on actual sales from price competition from the infringer;

(iii) lost profits from higher production costs;

(iv) lost profits from lost convoyed sales;

(v) lost profits from deflated market entry ("springboard damages and early adopter advantages");

(vi) losses of subsidiary companies;

(vii) lost profits on substitute products; and

(viii) lost potential (future) profits.

All of the above must have regard for the defendant's hypothesized behaviours, the possible existence of non-infringing alternatives available to the defendant and the ability of the plaintiff to have mitigated its losses as discussed previously.

2.1 Lost Profits on Lost Sales

2.1.1 Lost Sales

The burden is on the plaintiff to prove the number of sales that it would have captured but for the infringement.[36] A plaintiff may be compensated for lost sales both inside and outside Canada.[37] Usually, a plaintiff will prefer to receive an award of lost profits for lost sales rather than an award of a royalty for infringing sales, because a royalty typically splits the profit of the defendant between the plaintiff and the defendant.

The defendant is not an insurer against a general market crash, nor can the plaintiff complain of sales lost from legitimate competition. Changed external factors, such as an economic depression that reduces sales generally, entry of a new product in the market that would have reduced the plaintiff products market share or a rise in the price of raw materials that increases the plaintiff's production costs, must be taken into account in determining what the plaintiff's profits would have been but for the infringement. Conversely, if the market for the plaintiff's product is generally expanding, extrapolation of an increasing sales trend may be appropriate in determining what would have happened but for the infringement, subject to internal capacity constraints and other similar factors.

The fundamental question is, "What would in fact have happened but for the infringement?" This should be answered in a holistic fashion having regard to all

[36] See *Jay-Lor, supra* note 8, at 118.

[37] See *AlliedSignal Inc. v. DuPont Canada* (1998), 78 C.P.R. (3d) 129 at 139 (F.C.T.D.) and *Jay-Lor*, *ibid.*, at 178.

relevant factors, including both company-specific and macro-economic ones. These factors will offer opportunity for profit and present constraints and risk of loss. Where possible, the answer should be based on an economic model that captures the dynamic interplay of market forces as one might reasonably anticipate them to have played out over the relevant period with the benefit of hindsight.

These general principles imply that all factors that would have affected the plaintiff's profit should be taken into account in determining what profits the plaintiff would have made but for the infringement. In *AlliedSignal*, Heald D.J. enumerated a list of such factors that had been considered in prior Anglo-Canadian decisions:[38]

(i) the presence of competing products in the marketplace;

(ii) the advantages of the patented products over competing products;[39]

(iii) the advantages of the infringing product over the patented product;[40]

(iv) the market position of the patentee;[41]

(v) the market position of the infringer;[42]

(vi) the market share of the patentee before and after the infringing product entered the market;[43]

(vii) the size of the market both before and after the infringing product entered the market;[44] and

(viii) the capacity of the patentee to produce additional products.[45]

It is relatively straightforward to determine the level of market demand for the infringed products if the court has evidence of the infringing sales. The sales speak for themselves.[46] However, other items require much more detailed and careful market analysis. For example, showing that the plaintiff would have captured the defendant's sales requires proving that the intellectual property has market power, or that it could influence the market and draw sales to the item. This implies a detailed market analysis and provides an illustration of how factors unrelated to the infringement may affect damages. In *AlliedSignal,* Heald D.J. found that the patented product had significant advantages over the non-infringing alternatives. However, the

[38] *AlliedSignal, ibid.,* at 141.

[39] *United Horse-Shoe, supra* note 7, at 264; *Meters trial, supra* note 5, at 731.

[40] *Meters trial, ibid.,* at 731.

[41] *Catnic Components, supra* note 6 and *Hamilton Cosco v. Featherweight Aluminum* (1965), 47 C.P.R. 40 (Ex. Ct. - Registrar). In the latter case it was found that the plaintiff, an American company, had an ineffective distributor in Canada (evidence was introduced that many large department stores in prominent cities had never heard of the distributor), so they would have only captured 20 percent of the defendant's sales, rather than 80 percent in the presence of a functioning distribution system.

[42] *Meters trial, supra* note 5, at 731; *Catnic Components, supra* note 6, at 522.

[43] *Domco, supra* note 8, at 92 (F.C.T.D. – Prothonotary).

[44] *Domco ibid.,* at 62 (F.C.T.D.).

[45] *Domco, ibid.,* at 92 (F.C.T.D. — Prothonotary); *Catnic Components, supra* note 6, at 522.

[46] Alternatively, market surveys can be used to show that customers would buy the product if it were available to them.

infringing product had superior quality control compared with the plaintiff's product. Heald D.J. found that for at least one important customer the quality problems with the plaintiff's product were sufficiently serious that the evidence did not establish that but for the infringement, the plaintiff would have made the sales actually filled by the defendants. Consequently, the plaintiff was awarded a reasonable royalty rather than lost profits in respect of that customer.

This argument depends heavily upon the definition of the marketplace, including consideration of possible substitutes, classes of customers, demand and supply elasticities, and divisions by geography.[47] If the product in question is a widely distributed and purchased consumer product, it would generally be appropriate to look to market research, surveys and market share analysis. A market share analysis must take into account the full market realities, including for example, increased competition from other parties.[48] While market share analysis is an "inexact science", estimates based on a detailed assessment of factors relevant to the market in question and the particular plaintiff and defendant will be preferred over estimates based on more generalized considerations.[49] In contrast, if the infringing products are expensive, infrequently purchased items, it may be possible and appropriate to gather evidence on individual sales from specific customers.[50] The choice between these two methods of analysis depends on the facts of the case.[51]

The intellectual property owner must also demonstrate how it would satisfy market demand to capture these sales. Alternatives include in-house production with existing or expanded capacity, outsourcing, joint venturing and the like. The most appropriate basis will depend on the operating reality of the rights-holder. The quantum of lost profits is of course a function of the method by which demand is satisfied.

2.1.2 Lost Profits on Lost Sales

Having quantified the lost sales, and resulting revenues, the court needs to determine profits to assign to them, usually on a per item basis. To determine profit, cost must be determined. The appropriate costing methodology would depend on the fact circumstances may include elements of absorption and differential methods plus certain opportunity or economic related costs.[52]

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[47] This point is discussed in M.B. Stewart, "Calculating Economic Damages in Intellectual Property Disputes: The Role of Market Definition", (April 1995) JPTOS 321. At 334, Stewart writes:
Most antitrust issues cannot be analyzed in a meaningful way without consideration of the relevant market in which the act in question took place. Much the same can be said of damages in intellectual property disputes. Except for two polar cases — the "garage inventor" for whom lost profits are not in issue and the wronged (patent-holding) manufacturer or seller who could reasonably have expected to make all of an infringer's sales — the plaintiff in a patent dispute cannot be made whole without an explicit consideration of the relevant market(s) in which the patented product and the infringing product competed for sales.

[48] See *Jay-Lor, supra* note 8, at 212-214.

[49] See *Jay-Lor, ibid.,* at 215-216.

[50] This was the approach taken by Heald D.J. in *AlliedSignal, supra* note 37, where there were only nine infringing sales.

[51] See *Jay-Lor, supra* note 8, in which Snider J. approved a market share approached but remarked at 208 that "[h]ad this case involved sales of only a few infringing products, more customer-specific evidence might have been required, as was the case in *AlliedSignal.*"

The time over which the profits would have been earned, the circumstances of the plaintiff, physical sales volumes and capacity constraints — the operating reality of the plaintiff — will push one logically toward either the absorption or differential accounting approaches. They are not really alternatives in the computation of damages; there is an appropriate place for the application of each.

In *Domco,* Collier J. held as much, saying that the appropriate methodology depended on each case's "own particular facts and circumstances." [53] In the case at bar, he approved of Preston P.'s choice of the differential accounting method, citing the *Teledyne* case as precedent. Counsel for the defence had argued before the prothonotary that since all costs become variable in the long term, the application of differential costing was inappropriate for a 10-year period of infringement. Preston P. thought otherwise, and stated:

> The differential accounting concept is explained in the text Fundamentals of Management Accounting, 3rd ed. by Anthony and Welsch where at p. 203 it states:
>
> > Differential costs always relate to the future; they are intended to show what the costs would be if a certain course of action were adopted, rather than what the costs were in some past period.
>
> For the purposes of this reference am I not required to go back in time to 1967 and ascertain, on the basis of incremental sales lost by Domco due to the infringing activity of Armstrong, what incremental costs would have been incurred if such sales were in fact made by Domco?
>
> If this is so then, as is expressed at p. 257 of the text: "differential costs are estimates of what costs will be in the future." However, I do not have to entirely estimate the incremental costs because I have the benefit of the use of historical costs available through Domco's and Armstrong's records.[54]

As a general principle over the short term, the variable cost or differential costing method is appropriate. Where costs are truly fixed and would have been incurred by the plaintiff in any event, then it is likely inappropriate to deduct these costs for the damages award. In contrast, over the long term, the absorption method or full costing method may give the same results as the differential method as costs fixed in the short term become variable in the long term. Where capital expenditures need to be incurred to generate profits, they are an appropriate deduction.[55]

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[52] These approaches are discussed further in "Accounting of Profits in Intellectual Property Cases in Canada", *supra* note 15. In differential costing, fixed costs are not deducted from revenues to determine profits; in absorption costing, some portion of fixed costs is deducted. Hence, the use of absorption costing decreases the quantum of profits.

[53] *Domco, supra* note 8, at 65 (F.C.T.D.).

[54] *Domco, ibid.,* at 89 (F.C.T.D.—Prothonotary). See also *Jay-Lor, supra* note 8, at 223 approving a differential cost approach on the facts of the case.

[55] See "Accounting of Profits in Intellectual Property Cases in Canada", *supra* note 15 for further discussion of this issue.

The applicability of certain opportunity or economic related costs will depend on the facts; there is no general rule. Note that it is possible to construct a damages equivalent to the differential profits argument in the accounting of profits context.

If, due to the infringement, the plaintiff put his assets to an alternative profitable use, then a strict interpretation of the principle of restoration might suggest that a portion of these profits should also be subtracted from the lost profits to arrive at an amount that will restore the plaintiff to where it would be but for the infringement.[56] Presumably, the basis for this argument would be proof that the plaintiff had in fact enjoyed this "opportunity benefit" which it would not otherwise have enjoyed. However, there is no example of this explicit argument in the surveyed intellectual property case law or literature. It bleeds into the impact of mitigation.

2.2 Lost Profits due to Price Reductions

A plaintiff can also claim damages from price reductions forced by competition from the infringer.[57] Such a price reduction may be considered to be caused by the infringement, notwithstanding that the direct cause of the price reduction was the plaintiff's decision. There is case law to the effect that, for this head of damage to be sustained, the plaintiff's price reduction must have been reasonable in the circumstances,[58] must have been in response to the defendant's lower price, and must not lower the plaintiff's price below that of the defendant.[59] However, these cases followed the "natural and direct" remoteness test that has been supplanted in modern tort law. In the absence of more recent case law, detailed discussion of this point is difficult. It can be said that losses from price reductions are not generally too remote, though in particular instances they may be.[60]

It appears that there is no decided Commonwealth case where it was successfully alleged that the effect of the competition was only to prevent the plaintiff from making price increases. This argument was accepted as a possible ground of damages by both parties in the *AlliedSignal* reference, but Heald D.J. did not rule on the issue because there was insufficient evidence.[61] Similarly, this head of damages was accepted as a possibility in the South African Court of Appeal, but again failed

[56] If, due to the infringement, the plaintiff has available to it assets that it is able to put to an alternative profitable use, a strict interpretation of the principle of restoration might suggest that the profit actually earned through the alternative use should be subtracted from the lost profits to arrive at an award that will restore the plaintiff to where it would have been absent the infringement.

[57] See *Colonial Fastener, supra* note 35 and *American Braided Wire Co. v. Thompson & Co.* (1890), 7 R.P.C. 152 (Eng. C.A.).

[58] See *United Horse-Shoe, supra* note 7.

[59] *Colonial Fastener, supra* note 35, at 30 (S.C.C.).

[60] For example, in *Colonial Fastener, ibid.,* the Supreme Court rejected a claim for losses from a price reduction that the plaintiff asserted was made because its sales representatives had been told, apparently falsely, by prospective or actual customers that they would otherwise purchase more cheaply from the defendants. The court held that these losses were too remote (at 49). However, the court's treatment of the issue was cursory, and it may have been that the court was simply not satisfied on the facts that the price reduction had been induced by the threat of infringing competition, rather than by the threat of general competition.

[61] See *AlliedSignal, supra* note 37, at 181.

for lack of evidence.[62] However, American courts have awarded damages for such price erosion where sufficient proof of the effect has been offered.[63]

As narrowly interpreted in the existing case law, this head of damages rests on evidence of the timing of the price reductions compared with the price in the market. A court may reduce the award from what it otherwise would have been if it thinks that the plaintiff's reduction in price led to an increase in the size of the market,[64] essentially taking into account the plaintiff's mitigation efforts. Holding the market size constant, if the reduction was only partly due to the infringing acts of the defendants, an award may be made with respect to the part of the loss that results from such reduction.[65] The lost profit from a justified lower price may be claimed for both the sales the plaintiff actually made and the sales it would have made but for the infringement.

2.3 Lost Profits due to Increased Costs

Lower volumes resulting from the defendant's infringement can mean the same costs (often fixed costs) need to be allocated over fewer units resulting in a higher cost per unit on a full cost basis. Sometimes absolute costs are higher due to a loss of purchasing discounts or volume rebates. Both of these types of higher costs are often called a "loss of economies of scale". Manufacturing economies of scale can include:

(i) lower bulk purchasing prices from suppliers;

(ii) lower labour and material cost due to better utilization when manufacturing at higher batch sizes;

(iii) the costs of start-up and shut-down if the manufacturing facility is sometimes idled due to lower production volumes; and

(iv) higher error rates and therefore higher costs per run.

Other expenses may increase absolutely or relatively to meet the competition from the infringer and can be included in a damage claim. These include heavier advertising expenses, adding sales personnel, the increased use of discounts, or investing more heavily in a distribution system to improve service.

An award for increased expenses was allowed in *Jay-Lor* where Snider J. noted that "[t]here is a causal connection between the incurring of the additional selling

[62] *Omega Africa Plastics Pty. Ltd. v. Swisstool Mfg. Co.* (pty.), [1978(3)] S.A. 465, at 475 (App. Div.), as quoted in *AlliedSignal, ibid.,* at 201.

[63] See *Minnesota Mining and Manufacturing v. Johnson & Johnson Orthopaedics,* 976 F. 2d 1559; 24 U.S.P.Q. 2d 1801 (N.D. Ill. 1993); aff'd 71 F. 3d 1573, 37 U.S.P.Q. 2d 1138 (Fed. Cir. 1995). Compensable price reductions include reduction on the announcement of the introduction of a competing product; see *Brooktree v. Advanced Micro Devices Inc.*, 977 F. 2d 1555, at 1578-1581, 24 U.S.P.Q. 2d 1401, at 1417-1419 (Fed. Cir. 1992).

[64] See *American Braided Wire Co., supra* note 57.

[65] See *Colonial Fastener, supra* note 35.

expenses and [the defendant's] entry into the market. For this reason, I am inclined to agree . . . that an accounting should be done to reflect these costs."[66]

Similarly, an award for increased expenses occurred in the *Domco* case for financing costs, where Preston P. allowed $228,000 in additional damages:

> Had Domco earned more profit in the period in question as a result of additional sales, its working capital from operations would have been correspondingly increased thereby effecting a corresponding reduction in its debt load. This would have reduced the cost of borrowed money.[67]

2.4 Lost Profits from Lost Convoyed Sales

Convoyed sales are sales of goods that are typically sold with or as a result of the sale of an allegedly infringing item though the goods themselves are not protected by the intellectual property in question. The issue is particularly important in industries where a patented product is sold at a modest price, with most of the profit being generated by a service contract or sale of supplies.[68] To the extent that the loss of convoyed sales flows from the loss of the sales of the patented product then it is appropriate to quantify and claim both amounts.

Consistent with *Gerber v. Lectra,*[69] in *Jay-Lor,* the defendants argued that certain components, namely conveyers, were separate add-ons and not part of the infringing product, the vertical feed mixer. Snider J. found that Jay-Lor would not have sold a vertical feed mixer without a conveyor, and therefore concluded that Jay-Lor's damages included the loss of the sale of conveyors.[70]

2.5 Springboard Damages and Loss of Early-Adopter Advantages

A patentee or other intellectual property holder may enjoy residual advantages even after the formal term of protection is over. After expiry of a patent, competitors are entitled to enter the market, but it will take time for them to build up a customer base and start taking a share of the previously protected market. Infringement allows a competitor a head start in gaining market share; a competitor who infringed prior to the expiry will have a larger market share on expiry than one who started competing only the day the patent expired. Conversely, the patentee will have a smaller market share in the period just subsequent to expiry than it would have had in the absence of infringement.

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[66] *Jay-Lor, supra* note 8, at 248.

[67] *Domco*, supra note 8, at 94 (F.C.T.D.—Prothonotary). Preston P. was adopting statements from the affidavit of an expert witness.

[68] The classic example is ink-jet printers, where printers are sold at reduced prices in the expectation of substantial profits on the sale in ink-jet cartridges.

[69] *Gerber, supra* note 31.

[70] *Jay-Lor, supra* note 8, at 198.

Successful technology companies have demonstrated the importance of being an early entrant into a market and capturing market share. Convincing customers to be early adopters of their technology often ensures continued customer loyalty. Once technology is imbedded in a customer's operations or product, it is difficult and expensive to dislodge. Customers who have successfully integrated a particular software technology are generally, subsequent to adoption, a recurring source of service, upgrade and consulting revenues. A plaintiff that has been denied early market entry and customers' early adoption of its technology will have lost the broad base of benefits thereof.

The quantum of this residual advantage to the infringer is a function of the market share wrongly taken, the duration of the advantage, the infringer's profitability, the plaintiff's market response, and other factors. The plaintiff's loss is a function of the plaintiff's unique responses to the infringer's actions. The compensable damages are the result of dynamic factors—internal and external to the plaintiff. Damages of this nature are known by various descriptive terms: "springboard," "head start," "early-adopter," "bridgehead" or "accelerated entry" damages.

The view that such losses should be compensable in damages is consistent with the principle that, subject to consideration of non-infringing alternatives, the plaintiff is presumably entitled to all losses caused in fact by the infringement.

2.6 Losses of Subsidiary Companies

The English Court of Appeal in *Gerber,* following the *George Fischer* case,[71] unanimously held that the parent of a subsidiary can recover damages in respect of losses at the subsidiary company even if the subsidiary has no cause of action against the defendant. However, the court split on the standards of proof needed to support such a claim. Hobhouse L.J. and Hutchison L.J. both held that the plaintiff needed to explicitly prove the quantum of damage to the subsidiary that would flow through to the parent company. On the facts of the case, they held that Gerber had failed to address the impact of taxes, the subsidiaries and parents being located in different countries with different currencies, transfer pricing, and a complicated corporate structure, and denied Gerber's claim. In contrast, Staughton L.J. held that this approach would lead to injustice because plaintiffs would generally find it impossible to meet such standards of proof. Instead, he supported the approach of Jacob J. at trial, finding that there was a rebuttable presumption that a dollar lost by a wholly owned subsidiary is equal to a dollar lost by the parent.[72] In the Canadian case of *Domco,* the successful plaintiff was in a similar position in respect of its Canadian subsidiaries. Consistent with the approach taken by Staughton L.J. in *Gerber,* Preston P. allowed Domco to claim $625,000 for damages suffered by the subsidiaries. However, Collier J. disallowed this award on appeal, stating:

[71] *Gerber, supra* note 2, at 456, 478, and 481; *George Fischer (Great Britain) Ltd. v. Multi Construction Ltd,* [1995] 1 B.C.L.C. 260 (Eng. C.A.).

[72] *Gerber, ibid,* at 457. Staughton L.J. did hold that the effect of taxes was not adequately addressed by Jacob J., and would have remitted this issue to Jacob J. for further consideration.

> The damages are only recoverable by the legal entities who incurred them. Further, the contention that Domco would have been paid increased dividends, or enlarged its equity, is too speculative, if not too remote. The subsidiaries could have applied the "lost" profits in many ways, purely for their own advancement or benefit.[73]

2.7 Lost Profits on Substitute Products

If the patentee was not selling the patented product, but was instead selling a substitute product, it appears that the patentee may claim for the lost profits on the substitute product, so long as it can establish that lost sales of the substitute product was the consequence of competition from the infringer.[74] Conceptually, this is consistent with the loss of profit on convoyed sales and with the broader concept of simply making the plaintiff whole.

2.8 Lost Post-Trial Profits – Future Losses

In principle, damages encompass a loss of future profits on sales that, but for the infringement, would have been made after the date of the trial. Where there are lost profits after a date of trial that are clearly attributable to an infringement, they are best computed by application of a discounted cash flow technique. Care needs to be taken in this exercise because the projection entails the interaction of many variables.

The discount rate must be carefully chosen to reflect only the relevant execution and market risks. The discount rate will very much depend on the quality of the financial inputs. Where there are clearly lost future profits but they cannot be specifically traced to identifiable sales, or specific assets, tangible or intangible, the lost future profits are often characterized or quantified under the nomenclature of "goodwill".

In principle, lost goodwill attributable to the infringement should also be compensable in the same manner as lost future profits from identifiable assets. Again, discounted cash flow techniques are usually the best tool for computing the value of lost goodwill.[75]

3.0 Reasonable Royalties

Reasonable royalty calculations are generally made in four contexts:

(i) where the plaintiff typically exploits its intellectual property through licensing;

(ii) where the plaintiff exploits its intellectual property directly, but the defendant has made sales that would not have been captured by the plaintiff in any case;

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[73] *Domco, supra* note 8, at 69.

[74] See *Eli Lilly Co. v. Apotex, Inc.*, 2009 FC 991, 80 C.P.R. (4th) 1, at 651 and 863. The point was not decided as the patentee was permitted to elect an accounting of profits.

[75] For a general discussion of future or post-trial damages, see *Athey, supra* note 33, at 26-30.

(iii) where the defendant has made sales into a market that was not or could not be accessed by the plaintiff;[76] and

(iv) where the plaintiff has failed to prove either a "habitual" licensing fee or lost profits.

In addition, in *Jay-Lor,* Snider J. held that in the laid open or pre-grant period a patentee is not entitled to claim its lost profits as "reasonable compensation". Instead she equated the term "reasonable compensation" to "reasonable royalty" as understood in the context of post-grant damages.

The method for determining reasonable royalties has been given several formulations in different cases.

Whether damages are being calculated for infringing sales that a patentee plaintiff could not prove it would have captured, or for lost licensing revenue, there are three methods by which one can determine a reasonable royalty.

(i) Where it is typical of the plaintiff to exploit its intellectual property through licensing often providing an established history of negotiated licences for products comparable to the one that has been infringed, a straightforward application of historical licence rates to determine reasonable royalties is preferred.

(ii) Further, an indication of reasonable royalties may be found by examining comparable licences within a given industry.

(iii) In the absence of or in addition to historical or industry-wide "normal" royalty rates, the next best approach to determine a reasonable royalty is to construct a hypothetical nego-tiation and assess various factors to determine the appropriate amount of a hypothetical licensee's (that is, an infringer's) anticipated profits that should be paid to the licensor (that is, the plaintiff) as a result of the infringement.

[76] In such cases in which, put loosely, the defendant's use "has not hurt" the plaintiff, the plaintiff is entitled to a reasonable royalty, ultimately for the pragmatic reason that, "[o]therwise, that property which consists in the monopoly of the patented articles granted to the patentee has been invaded, and indeed abstracted, and the law, when appealed to would be standing by and allowing the invader or abstractor to go free". See *Watson Laidlaw Co. Ltd. v. Pott, Cassells and Williamson, (*1914), 31 R.P.C. 104, at 120, per Lord Shaw. To the same effect, see *Meters appeal, supra* note 5, at 164-65, per Moulton L.J.

3.1 Established Licences and Normal Royalty Rates

Strong evidence of the market rate for a licence exists if the plaintiff has an established history of negotiating licences for product comparable to the one that has been infringed. The most straightforward application of historical licences occurs when the patentee routinely granted licences at a certain rate. This, however, is rarely the case, as the criteria for an "established" royalty" are as follows:

(i) they must be paid or secured before the infringement began;

(ii) they must be paid by a sufficient number of persons to indicate the reasonableness of the rate;

(iii) they must be uniform in amount;

(iv) they must not have been paid under threat of suit or in settlement of litigation; and

(v) they must be for comparable rights or activities under the patent.[77]

However, it must be emphasized that there is no rule that whenever the rights holder has granted a licence in the past, it is limited to an award of reasonable royalties. The question is whether the historical patterns of licensing establish that the plaintiff would have granted a licence to the defendant on the established terms if it had been approached at the time of the infringement. A pattern of granting licences is good evidence that the rights holder would have granted a licence if the defendant had approached it; an occasional grant of a licence in special circumstances is not.

Note also that a normal rate can only be taken as evidence of the rate the plaintiff would have agreed to if the defendant's use fell within the normal terms of the licence. When the defendant's use would have been a breach of standard licence terms, it is unreasonable to suppose that the plaintiff would have agreed to license such a use at the standard rate.[78]

Licences negotiated to settle litigation have been held by the House of Lords not to be indicative of the "going rate"[79] because such rates are not embracing of all the dynamics that would have been in play at the time of the infringement. An example of this occurred in the case of *Consolboard v. MacMillan Bloedel.*[80] The court had evidence of three alternative negotiated royalties: first, an agreement to pay a royalty of 2.5 percent of the net factory selling price; second, a royalty of 3.5 percent; and third, a licence for 4.5 percent. The first licence was negotiated with the former employer of the inventor, who had a strong claim to "shop rights" in the invention, while the third amount was negotiated partly to avoid litigation over the validity of the

[77] See *Mobile Oil Corp. v. Amoco Chems. Corp.,* 915 F. Supp. 1333, 1342 (D. Del. 1994). The *Mobil* case notes that "[b]ecause of these stringent criteria, few courts have actually found and established royalty."

[78] See *Monsanto Co. v. McFarling,* 488 F. 3d 973, 979 (Fed. Cir. (2007).

[79] *General Tire & Rubber Co. v. International Synthetic Rubber Co. Ltd.,* [1968] R.P.C. 161.

[80] *Consolboard Inc. v. MacMillan Bloedel (Sask.) Ltd.* (1982), 63 C.P.R. (2d) 1 (F.C.T.D.), varied (1983), 74 C.P.R. (2d) 199 (F.C.A.).

patents in question.[81] In both cases, the negotiated rates would reflect these particular circumstances, and the court rejected these royalties as not reflecting an agreement between a willing licensee and licensor bargaining on equal terms. This was upheld by the Federal Court of Appeal.

3.2 Industry Standard Rates

An indication of reasonable royalties may be found by examining comparable licences within a given industry. As it is unlikely that an exactly comparable licence can be found, this approach requires the evaluator to adjust for the exact context of the hypothetical licence.

The fundamental criticism of comparison to existing licences is that the approach ignores the actual profitability of the intellectual properties and companies in question. Nevertheless, industry standard rates quite often are similar to royalty rates found through financially based methods, and can often form a valuable benchmark for review.

However, in looking into industry-standard rates, it is essential to establish that the "standard" rates reflect market conditions that are comparable to those that would have been faced by the plaintiff and defendant at the relevant time. If this cannot be established, the industry-standard rates will be of little assistance, and "one should prefer the results that are based on the application of a generally accepted methodology to the specific facts of the case at hand."[82]

3.3 The Hypothetical Negotiated Licence

There is no difference in principle between a normal royalty and a reasonable or hypothetical negotiated royalty. The difference is in the evidence relevant to establishing the royalty. When it can be established that the plaintiff habitually granted licences at a normal rate, then this normal rate is the best evidence of the rate that that plaintiff would have agreed to, and there is no need to inquire as to idiosyncratic aspects o the business position of the two parties. When a normal rate cannot be established, then more detailed evidence is required to establish the outcome of the negotiation that would have taken place but for the infringement.

[81] Shop rights in the United States exist when an employee who is not employed for the purpose of invention invents and develops an invention, which the plant puts into use as part of the development process. In such cases, the plant has a "shop right" to continue using the invention without payment to the patent-holder. The plant, however, cannot sell the patented item or build copies.

[82] See *Jay-Lor, supra* note 8, at 129.

If the evidence does not establish a historical normal rate to apply, then damages will be based on the reasonable royalty that would have been agreed to by a willing licensee and licensor if they had negotiated a licence at the time of first infringement.[83] This hypothetical negotiation is also the approach taken in the United States.[84]

It is possible that, in some cases, the price at which the right-holder acting reasonably would have licensed his intellectual property is higher than the maximum price that the infringer would have been willing, or perhaps able to pay. The treatment of this situation depends on the remedial theory being applied; generally however, the principle of compensation and the "but for" test implies that the court should act to restore the licensor to where it would have been but for the infringement, not to where the licensor would have been if it had licensed the infringer.

In a hypothetical negotiation, a reasonable royalty rate is "that which the infringer would have had to pay if, instead of infringing the patents, [the infringer] had come to be licensed under the patent."[85] Or, as was said by Falconer J. in the reference in *Catnic Components:*

> I have to consider "what would have been the price which…could have reasonably been charged" for the plaintiff's permission to use the patented invention as the defendants did. In his opinion in the *General Tire* case Lord Salmon thought … that in a case where there is no established market rate the assessment must be based on the basis of what royalty a willing licensee would have been prepared to pay and a willing licensor to accept.[86]

This implies that the parties are acting reasonably and are under no compulsion to license.[87] Extrapolating from the definition of fair market value, a fair market royalty might be defined as the "highest royalty in an open unrestricted market between informed and prudent parties acting at arm's length under no compulsion to license, expressed in terms of money or money's worth". The fair market royalty is generally expressed as a rate, requiring that the base against which it is applied be clear.

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[83] See *AlliedSignal, supra* note 37, at 176; *Catnic, supra* note 6, at 530, per Falconer J.: "where there is no established market rate the assessment must be on the basis of what royalty a willing licensee would have been prepared to pay and a willing licensor accept."

[84] For a good summary of U.S. law on this point, see *Applied Med. Res. Corp. v. United States Surgical Corp.,* 435 F. 3d 1356 (Fed. Cir. 2006).

[85] *AlliedSignal, supra* note 37 at 176, and *A.G. far Autogene Aluminium Schweissung v. London Aluminium Co.* (No. 2) (1923), 40 R.P.C. 107 at 113 (Ch. D.). Similarly, in Colonial Fastener Co. v. Lightning Fastener Co., [1936] 2 D.L.R. 194 at 205 (Can. Ex. Ct. - Referee), Duclos referee said: "I find that as to such sales the defendants are liable to pay a fair royalty, that is, they must pay the plaintiff what it would have cost them to make these sales lawfully." This decision was upheld upon appeal to the Supreme Court of Canada.

[86] See *Catnic, supra* note 6, at 530. See also Sargent J. in *Autogene Aluminum Schweissung, ibid.,* at 113.

[87] Similarly, in the United States the Sixth Circuit court stated the "willing licensor-willing licensee" rule to determine reasonable royalties: In fixing damages on a royalty basis against an infringer, the sum allowed should be reasonable and that which would be accepted by a prudent licensee who wishes to obtain a licence but was not so compelled and prudent patentee, who wished to grant a licence but was not so compelled. In other words, the sum allowed should be that amount which a person desiring to use a patented machine and sell its product at a reasonable profit would be willing to pay. *Horvath v. McCord Radiator & Manufacturing Co.* 100 F.2d 326 (6th Cir. Mich. 1938).

The notional date at which the royalty rate would be struck, is immediately prior to the date of the first infringement. This can be a factor in the licensing of risky technology, because the licensee might obtain favourable terms for bearing substantial risk.[88] The balance of risks and benefits is somewhat offset by the "book of wisdom" principle allowing consideration of events after the hypothetical negotiation, but before trial. ("At times the only evidence available may be that supplied by testimony of experts as to the state of the art, the character of improvement, and the probable increase of efficiency or saving of expense. This will generally be the case if the trial follows quickly after the issue of the patent. But a different situation is presented if years have gone by before the evidence is offered. Experience is then available to correct uncertain prophecy. Here is a book of wisdom that courts may not neglect. We find no rule of law that sets a clasp upon its pages, and forbids us to look within.")[89]

A "hypothetical negotiation" is not thought of as occurring between parties in isolation. Instead, it is presumed to take place in an open and unrestricted market where all prospective licensees will notionally participate and all relevant factors in the marketplace would be considered. The presence of non-infringing alternatives to the use of the intellectual property available to the licensee must be considered and they will tend to limit the amount that a licensee would be willing to pay for the intellectual property.[90] This is illustrated in *Grain Processing*[91] where the non-infringing alternative available to the defendant was found to cost slightly more than the infringing alternative and the court found that this production cost difference effectively capped the reasonable royalty award.

Balancing the licensee's ceiling is the licensor's floor, or royalty below which a licensor would have been unwilling to agree. That floor would notionally be established by considering all the avenues of exploitation reasonably available to the licensor and the related risk/reward ratio, having regard for the licensor's then operating realities.

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[88] For example, in *Integra Lifesciences I Ltd. v. Merck KGaA,* 331 F. 3d 860 (Fed. Cir. 2003); rev'd. 545 U.S. 193, 125 S. Ct. 2372 (2005), the defendant conducted initial work on the plaintiff's pioneer technology while licensing negotiations were ongoing. Negotiations broke down and litigation ensued. The damages awarded at trial were relatively low because the hypothetical bargain was held to have taken place early in the process, before the defendant's work crossed the line from pure experiment to development. Because the technology was still very risky at that time, the court held that the plaintiff would have agreed to terms very favourable to the defendant. Indeed, it appears that in order to obtain a better hypothetical bargain, the plaintiff was arguing the experimental-use defence on behalf of the defendant in order to push the date of the hypothetical bargain downstream, where the technology had shown increased promise. See also *Boston Sci. Corp v. Cordis Corp.* 777 F. Supp. 2d 738, 791 (D. Del. 2011), citing *Georgia-Pacific, infra* note 92 and *Wang Labs, Inc. v. Toshiba Corp.*, 993 F. 2d 858, 869 (Fed. Cir. 1993).

[89] See *Sinclair Refining Co. v Jenkins Petroleum Process Co.,* 289 U.S. 689, 298 (U.S. 1933).

[90] See Shifley, C., "Alternatives to Patent Licenses: Real-World Considerations of Potential Licensees Are — and Should Be — A Part of the Courts' Determinations of Reasonable Royalty Patent Damages", (1993) 34 IDEA 1.

[91] See *Grain Processing, supra* note 22.

Suppose, for example, that a licensor is faced with two potential licensees in the same market – one is an efficient corporation and the other is inefficient. Assume that the efficient licensee is thus able to generate larger excess profits through use of the intellectual property than the inefficient potential licensee. If both potential licensees are equally able to enter relevant markets, the more efficient firm will be a more attractive licensee than the less efficient firm, and the royalty negotiated with the efficient licensee will likely be higher than that which would be negotiated with the inefficient licensee in isolation. Although the less efficient firm may well be able to negotiate a licence from the rights holder, the royalty it ought to pay will be increased by the presence of the more efficient firm.[92]

Licence terms historically agreed to by the plaintiff may be relevant even if the circumstances are sufficiently different that they cannot be taken as establishing a normal royalty.[93] The difference is simply in adjusting for these differences where possible.

3.3.1 The Royalty Base

Before one determines the royalty rate, it is necessary to understand the base to which that royalty rate will be applied as this necessarily influences the rate.

This factor has not received great attention in the Canadian case law but, generally, the base is sales. However, it is not necessarily definitive as to what sales are the relevant sales.

Another consideration is that it may be difficult for the licensor to verify the actual level of use of the technology by the licensee, or the technology may also create irregular but significant convoyed sales. In such cases, the licensor may prefer that the royalty be at least partially based on verifiable sales of products that do not incorporate the licensed technology.

In the United States, the "entire market value rule" is sometimes used to determine the royalty base. If the patented component is the "basis for customer demand," then the revenue from the entire product may be used in the royalty base.[94] However, this rule has been heavily criticized as overly rigid, and may lead to unrealistic results.[95] For example, in the recent *Uniloc v. Microsoft* decision,[96] Uniloc's expert used the entire market value rule to justify a reasonable royalty of 2.9 percent of the gross

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[92] United States law also reflects the state of the overall market. Chisum §.20.03[3] states: "The more recent decisions stress the limited utility of the willing buyer-settler rule." See *Georgia-Pacific Corp. v. United States Plywood Corp.,* 318 F. Supp. 1116 (S.D.N.Y. 1970); mod'd. and aff'd. 496 F. 2d 295 (2d Cir. 1971) and *Panduit Corp. v. Stahlin Brothers Fiber Works, Inc.* 575 F. 2d 1152, at 1156 (6th Cir. 1978).

[93] Of course, previous licensing arrangements are still valuable evidence in finding this hypothetical royalty. Chisum notes that in the United States, existing licences provide, as a practical matter, a floor beneath which the judicially ascertained reasonable royalty is unlikely to fall. Chisum, *ibid.,* at §20.03.

[94] The seminal case is *Rite-Hite Corp. v. Kelley Co.,* 56 F. 3d 1538, at 1545, 35 U.S.P.Q. 2d 1065 (Fed. Cir. 1995) (en banc).

[95] See U.S. Federal Trade Commission, "The Evolving IP Marketplace," supra note 10 at 205-212 for a discussion and critique.

[96] *Uniloc USA, Inc. v. Microsoft Corp., infra* note 126.

revenue for all of Microsoft's products that contained product keys for activation; in contrast, the plaintiffs did not show that the activation feature was the basis for customer demand. The Federal Circuit overturned this result and cautioned against using the entire market value rule where the patented component does not create the basis for customer demand.

It appears that this is the same principle that applies in the context of apportionment in accounting of profits or damages for lost profits whereby the defendant's sales of the infringing items are not due entirely to the infringement. Care must be taken, however, to avoid double counting. If the royalty base excludes sales that were made on the basis of the defendant's contribution, either on the basis of an assessment of individual sales, or on a market share approach, it is not appropriate to further reduce the reasonable royalty by way of apportionment.

3.3.2 Apportionment

Damages in the form of lost profits may be apportioned if the defendant's contribution accounted for a significant portion of the demand. Historically, the issue of apportionment does not appear to have arisen directly in the context of damages in the form of a reasonable royalty and generally apportionment has not been considered in this context in Canadian cases.

Improvements made by the defendant should be considered in setting the royalty rate. As a result, it should not usually be necessary to perform an apportionment. However, it would be consistent with the context of damages for lost profits if damages in the form of reasonable royalty may be apportioned if, for example, improvements made by the defendant account for a significant portion of the demand.[97] It would also be consistent with the Federal Circuit's findings on the entire market rule in the *Uniloc* case, which warned that admitting accused product revenues can be the basis for a new trial on damages if the accused technology is not the basis for customer demand. Again, the onus is on the defendant to prove that demand for the product arose from circumstances other than the patented features.[98]

3.3.3 The Royalty Rate

Having determined the royalty base, it is then necessary to determine the royalty rate to apply to that base. There are three approaches one can apply:

(i) The Anticipated Profits Approach;

(ii) The Analytical Approach; and

(iii) Investment Return Analysis.

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[97] *Jay-Lor, supra* note 8, at 190-99.
[98] *Jay-Lor, ibid.,* at 196.

Each of these approaches is discussed below. While these approaches contemplate a running royalty, not all royalties take the form of running royalties. Other forms of royalties include lump sum, per unit, and sliding scale.

3.3.3.1 The Anticipated Profits Approach

An insightful and commonly used framework for thinking about the split of estimated profits between the hypothetical licensee and licensor is the anticipated profits approach. This approach has been a long-standing approach in the licensing industry and seeks to share the profits in a fair manner so that each party could expect to benefit from the relationship proportionately to its investment and level of risk. The two Canadian trial decisions that have analyzed a reasonable royalty in detail, *AlliedSignal* and *Jay-Lor* have both applied the anticipated profits approach. In the ten years between the *AlliedSignal* and *Jay-Lor* decisions, there has been considerable development in the method adopted by the courts to determine a reasonable royalty rate, culminating in the adoption of the anticipated profits approach in *Jay-Lor*.[99] In *AlliedSignal,* this was labeled the "25 percent rule", but "anticipated profits" is arguably a more accurate description.

The anticipated profits approach refers to the profits of the defendant licensee and not the plaintiff licensor. *AlliedSignal* used a variant of this rule wherein Heald J. took the profits the plaintiff would have made had it hypothetically entered the market and made the infringing sales.[100] This is referred to in the *Jay-Lor* case as the *AlliedSignal* approach.

The general rule should be to look to the licensee's profits first.[101] The intent is that a reasonable royalty will share the anticipated profits earned by the licensee from exploitation of the intellectual property between the parties, with the larger part typically going to the one who bears the most risk – usually the licensee.

There are numerous methods to decide how to divide the profit flow between licensee and licensor, and we will examine three: the anticipated profits approach, the analytical approach, and investment return analysis. The three alternative methodologies are all ways of approaching the ultimate legal question of what would have happened had the parties negotiated a licence. They should provide roughly consistent and reconcilable results, and the choice between them will depend on the evidence. In some cases there may be evidence that a particular methodology is commonly used in a particular industry. In other cases one or more of the methodologies may be applicable in principle, but not useful because the factual basis for applying it is not available on the evidence.[102]

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[99] See M. Crichton, *Canada Adopts the Anticipated Profits Approach for Calculating a Reasonable Royalty Rate* (2008).

[100] *AlliedSignal, supra* note 37, at 212.

[101] See *Jay-Lor, supra* note 8, at 147, in which Snider J. rejected the *AlliedSignal* approach on the evidence before her, while recognizing that it might be applicable in other situations.

[102] See *Jay-Lor, ibid.,* at 139, where the plaintiff's expert noted that that data on the defendant's financial situation and business model, which was necessary to apply the analytical approach, was not available.

The usual starting point in this analysis is an estimation of the anticipated economic benefit of the intellectual property in the hands of a licensee.[103] The absorption cost approach is used to deduct both direct variable and incremental overhead costs from the infringer's net sales.[104] In contrast to the analytical approach discussed below, the focus is on the licensee's expected incremental profits on a full absorption basis from the use of the protected technology, not its historical profits.[105]

The hypothetical negotiation will divide these anticipated profits between the licensor and the licensee so that the profits are shared based on:

(i) their relative contribution of assets; and

(ii) risks faced by each party.

There exists an assumption that the licensee should be entitled to the larger part of the pre-tax profits which is based on an assumption that the licensee is taking on a large risk element and contributing substantial assets to the venture. The contribution and risks, and precise share will be a matter of evidence.

The greater or lesser the risks undertaken by the licensee, the higher or lower the licensee's proportion of the pre-tax profit, respectively. In particular, if exploiting the licence requires an investment by the licensee in complementary assets (such as manufacturing and distribution capability), the risk to the licensee is correspondingly higher than it would be if the licensee is able to use pre-existing assets. Risk is also a function of the alternative opportunities available. If the licensee can deploy the necessary new investment to another opportunity with a greater certainty of return, then it may be unwilling to commit to the licence opportunity without receiving a more generous share of the profits. Some of these considerations are listed in Figure 2 on the following page.

When presenting these factors as evidence in court, it may be persuasive to translate them into the factors relevant for the determination of the reasonable royalty listed in the *AlliedSignal, Jay-Lor,* and *Georgia-Pacific* cases discussed below. These factors are only guidelines for ensuring that all relevant business and legal considerations are taken into account.

It is the profit "from the sale of the patented technology" that is important.[106] If the patented technology is one small component of a larger product, such as a patented gas pedal in an automobile, it is not realistic to suppose that the automobile manufacturer would turn over a share of the profit on the entire vehicle for the right to use the patented pedal.

[103] *Jay-Lor, ibid.,* at 150.
[104] *Jay-Lor, ibid.,* at 157.
[105] *Jay-Lor, ibid.,* at 155.
[106] *Jay-Lor, ibid.*, at 150.

Figure 2 – Factors that Will Affect Licensee's Desired Profit Share

Emphasis: the Assumption of Risk and Attendant Royalty Rate

Increased risk leading to desired lower royalty rate

1. Unusually high or unusually risky investment in new assets by licensee
2. The extent to which the licensee has complementary assets
3. Alternative uses of licensee's assets offering a superior profit/risk combination
4. Weak technology package offered by licensor
5. If licensor is a competitor in the market, the extent and degree to which the licensee must compete with the licensor

Lower risk leading to willingness for higher royalty rate

1. Alternative prospective licensees inducing a competitive bidding process
2. If the licensee will be utilizing otherwise unprofitable existing assets or assets with excess capacity
3. If the licensor will provide assets typically provided by the licensee, i.e.
   - manufacturing capabilities
   - marketing force

In cases in which the patented part contributes a substantial part of the value, as was the case in both *AlliedSignal* and *Jay-Lor,* it is appropriate to start with the profit on the entire product as the royalty base and adjust the royalty rate to reflect the value contributed by non-patented parts. It has been suggested that the "smallest priceable component" is a practical choice for the royalty base in such cases.[107] Even then, the rate may need to be adjusted if the patented invention contributes only a part of the value of that component.

AlliedSignal and *Jay-Lor*[108] illustrate the application of the anticipated profits approach. Both cases accepted that a normal split of the profits was in the range of 25 to 33 percent of the profits and then used the same set of factors to adjust the final royalty rate towards the upper or lower end of that range. The proffered relevant factors impact on the royalty rate in that they affect the risk to profit earning. Many of the factors weighed in different directions in the two cases based on the facts.

[107] U.S. Federal Trade Commission, "The Evolving IP Marketplace," *supra* note 10 at 212.
[108] *Jay-Lor, supra* note 8.
[109] *Jay-Lor, ibid.,* at 160 Rate increased due to technology transfer; *AlliedSignal, supra* note 37, p. 179, rate reduced because no technology was transferred.
[110] Contrast *Jay-Lor, ibid,* at 161; *AlliedSignal, ibid.*

The list of general factors that may be considered in determining the hypothetically negotiated royalty as given by the court in *AlliedSignal* and used in *Jay-Lor* consisted of:

(i) **Transfer of technology:** The royalty rate will be increased if patentee transferred technology to the defendant, but reduced if the defendant relied on its own technology and needed a licence only to avoid infringement.[109]

(ii) **Difference in the practice of the invention:** The rate will be increased if the processes used by the defendant and patentee are the same, and reduced if the technologies are different. This is related to the transfer of technology factor, above.[110]

(iii) **Non-exclusive licence:** The royalty rate is reduced if the hypothetical licence is non-exclusive. This factor is only material where an exclusive licence could potentially be granted. If it is not material, it will not affect the royalty rate.[111]

(iv) **Territorial limitations:** A more extensive territorial exclusivity will tend to increase the royalty rate.[112]

(v) **Term of the licence:** The longer the licence term relative to the patent term, the higher the royalty; but if non-infringing competition would have reduced the economic value of the patent by the end of its term, a full term licence may be no more valuable than one for a shorter term.[113]

(vi) **Competitive technology:** A technology that is very desirable in comparison with non-infringing alternatives will attract a higher royalty than one that has competing non-infringing alternatives.[114]

(vii) **Competition between licensor and licensee:** The fact that the plaintiff and the defendant would be competing against each other would increase the royalty rate. This is an important factor, when applicable.[115]

(viii) **Demand for the product:** Increasing demand for the product will increase the royalty rate.[116]

(ix) **Risk of product sales:** The rate will be increased if the risk that the product would not sell is low.[117]

(x) **Novelty of invention:** If the invention is a significant improvement on the known technology, the royalty rate will tend to increase.[118]

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[111] *Jay-Lor, ibid,* at 162 (not material); *AlliedSignal*, ibid (material, non-exclusive licence reduced rate).

[112] Compare *Jay-Lor, ibid.,* at 163, finding that "it would have been likely that the parties would have agreed to allow the Defendants the same territory they were selling into," and concluding that this was a neutral factor, with *AlliedSignal*, ibid., holding that a licence limited to Canada would tend to reduce the rate.

[113] *Jay-Lor, ibid.,* at 164, noting the effect of competition; *AlliedSignal, ibid.*

[114] *Jay-Lor, ibid.*, at 165 (no competing technologies); *AlliedSignal, ibid.* (competing technologies available).

[115] *Jay-Lor, ibid.,* at 166, noting that competition from the defendants is a factor "very much in favour of the Plaintiffs"; *Allied Signal, ibid.* (competing technologies).

[116] *Jay-Lor, ibid.*, at 167; *AlliedSignal, ibid.*

[117] *Jay-Lor, ibid.*, at 168; *AlliedSignal, ibid.*

[118] Compare *Jay-Lor, ibid.,* at 169, where the technology was a significant improvement and the rate therefore increased, with *AlliedSignal, ibid.,* where the opposite was true.

(xi) **Compensation for research and development costs:** Higher research and development costs will increase the royalty rate; lower research and development costs will reduce it.[119]

(xii) **Displacement of business:** If the product is central to the defendant's business, the royalty rate will be higher, while if it is only one business line of many, rates will be reduced.[120]

(xiii) **Capacity to meet market demand:** The royalty rate will be increased if the patentee has the capacity to meet the market demand itself, and reduced if it does not.[121]

The U.S. case of *Georgia-Pacific Corp. v. United States Plywood Corp.*[121] identifies the following possible considerations, many of which duplicate the above list from *AlliedSignal* and used in *Jay-Lor.*

(i) The royalties received by the patentee for the licensing of the infringed patent, proving (or tending to prove) an established royalty;

(ii) The rates paid by the licensee for the use of other patents comparable to the patent in suit;

(iii) The nature and scope of the licence, as exclusive or non-exclusive, or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold;

(iv) The licensor' s established policy and marketing program to maintain its patent monopoly by not licensing others to use the invention or by granting licences under special conditions designed to preserve the monopoly;[122]

(v) The commercial relationship between the licensor and licensee, such as whether they are competitors in the same territory in the same line of business or whether they are inventor and promoter;

(vi) The effect of selling the patented specialty in promoting sales of other products of the licensee, the existing value of the invention to the licensor as a generator of sales of its non-patented items and the extent of such derivative or convoyed sales;

(vii) The duration of the patent and the term of the licence;

(viii) The established profitability of the product made under the patent, its commercial success and its current popularity;

[119] *Jay-Lor, ibid.,* at 170 (some R&D costs increased the royalty slightly; *AlliedSignal, ibid.* (low R&D costs reduced the rate).

[120] *Jay-Lor, ibid.,* at 171; *AlliedSignal, ibid.*

[121] Compare *Jay-Lor, ibid.,* at 172; *AlliedSignal, ibid.*

[122] *Georgia-Pacific, supra* note 92.

[123] For example, in *SmithKline Diagnostics Inc. v. Helena Laboratories Corp.* 926 F.2d 1161 at 1168; 17 U.S.P.Q. 2d 1922 at 1928 (Fed. Cir. 1991) the reasonable royalty was raised as the patentee was an "unwilling licensor".

(ix) The utility and advantages of the patented property over the old modes or devices, if any, that had been used for working out similar results;

(x) The nature of the patented invention, the character of the commercial embodiment of it as owned and produced by the licensor and the benefits to those who have used the invention;

(xi) The extent to which the infringer has made use of the invention and any evidence probative of the value of that use;

(xii) The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions;

(xiii) The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks or significant features or improvements added by the infringer;

(xiv) The opinion testimony of qualified experts; and

(xv) The amount that a licensor (such as the patentee) and a licensee (such as an infringer) would have agreed upon at the time the infringement began if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee - who desired, as a business proposition, to obtain a licence to manufacture and sell a particular article embodying the patented invention - would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a licence.

Since no prescribed method to determine reasonable royalties would apply in all circumstances, expert witnesses are crucially needed to guide the court through these considerations in the context of the case facts and circumstances.

While the lists above may appear to be somewhat mechanical, both decisions relied on the testimony of expert witnesses to determine whether the factor was relevant, whether other factors ought to have been considered, and the correct weighting of each factor. The list is therefore unique to the two cases – and a starting point for others.

The eventual division of anticipated profits will be further affected by the comparative strengths of the parties and their position in the marketplace as a whole. For example, in *Jay-Lor* Snider J. adjusted the royalty upwards after accepting expert opinion that the defendant would have been willing to pay more because of the potential upside of being both a manufacturer and dealer. If the licensee already possesses established strengths in areas where the licensor is also strong, these strengths tend to offset each other and thus diminish the licensor’s bargaining strength. However, if the licensor has numerous strong alternatives for exploitation of the intellectual property, including the possibility of exploiting the technology in-house, the licensor’s bargaining position is correspondingly strengthened.

Regardless of the percentage of the defendant's or plaintiff's anticipated profits to be shared, once determined it is translated into an equivalent percentage of the defendant's sales so as to determine the royalty rate. The process of that translation is beyond the scope of this article but in the simplest case, if defendant's profit is 16 percent of sales, and the royalty is 25 percent of those profits, then the royalty rate will be 25 percent times 16 percent, or 4 percent of sales.

U.S. Law and "The 25% Rule"

As stated above, both *AlliedSignal* and *Jay-Lor* apply the anticipated profits approach by adopting a "normal" split of the profits in the range of 25 percent to 33 percent and then considering various factors to adjust the final royalty rate to reflect the unique facts of the case.

This use of this starting point is sometimes referred to as the 25% Rule and applications of the 25% Rule have been criticized, especially where little or no consideration is given to the unique facts of the case. Some criticisms include:

(i) the rule ignores precise profits generated by the intellectual property;

(ii) the rule might ignore a variety of costs, including advertising, distribution,[124] and the costs of complementary assets;

(iii) by its very name, a court or other user of the rule might become attached to the 25/75 split, and may not appreciate that it is only a starting point or a paradigm for analysis;[125] and

(iv) the rule does not specifically analyze whether the 25 percent rate would provide an adequate return to the rights holder or leave the defendant with appropriate profits.

Recently, in *Uniloc USA, Inc. v. Microsoft Corp.,* the U.S. Federal Circuit Court of Appeals rejected the rule entirely, as "fundamentally flawed," as a tool for determining a baseline royalty rate.[126] The criticisms made by the court were that:

(i) it fails to account for the unique relationship between the patent and the accused product;

(ii) it fails to account for the unique relationship between the parties; and

(iii) the rule is essentially arbitrary and does not fit within the model of the hypothetical negotiation within which it is based.

The rejection of the 25% Rule in *Uniloc* is not consistent with the adoption of the

[124] See R.L. Parr, *Intellectual Property Infringement Damages: A Litigation Support Handbook (Toronto: John Wiley & Sons, 1993),* 37 and G.V. Smith and R.L. Parr, *Valuation of Intellectual Property and Intangible Assets,* 2d ed. (Toronto: John Wiley & Sons, 1994). See also criticism of the 25 percent royalty rule in J.W. Schlicher, Licensing Intellectual Property (Toronto: John Wiley, 1994), 34.

[125] See Goldscheider, R., *Technology Management: Law, Tactics, Forms,* (1984) Clark Boardman Callaghan, at §10.04. In particular, deviation from the standard rates may occur most often with drastic or pioneer innovations: these inventions are the most valuable and are perhaps the innovations most in need of legal defence.

[126] *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F. 3d 1292, 1315 (1st Cir. R. 1. 2011), p. 1315 slip op.

anticipated profits approach in *Jay-Lor.*

Goldscheider, a pioneer and continued proponent of the 25% Rule writes:

> I believe the Federal Circuit has been misled about the realities of the Classic 25% Rule, which is quite distinguishable from what the Federal Circuit described in *Uniloc* as the "25% Rule of Thumb".[127]

Goldscheider defines the Classic 25% Rule as a flexible method for estimating a baseline royalty based on credible profitability or cost savings to the licensee. Once that baseline royalty is estimated, an expert must still apply other factors, such as the *Georgia-Pacific* factors and non-infringing alternatives to determine the final reasonable royalty. In the hypothetical negotiation with a comprehensive application of the Classic 25% Rule, the baseline royalty estimated at 25 percent is not the end of the analysis.[128] He considers the "Rule of Thumb" envisaged and disapproved of by the Federal Circuit to simply consist of a fixed ratio of 25/75 for determining baseline royalty requiring no further analysis to arrive at a reasonable royalty.

Goldscheider's comments above appear to be consistent with the objective of the anticipated profits approach in *Jay-Lor*.

While, depending on the fact circumstances, the application of a starting point of 25 percent in the anticipated profits approach may be reasonable when the entire product is patented, it may become increasingly more difficult to apply as the patented component comprises an increasingly smaller proportion of the product.

The impact of *Uniloc*, if any, on Canadian law remains to be determined.

3.3.3.2 The Analytical Approach

The analytical approach estimates a reasonable royalty by subtracting the normal profit margin of the defendant's business from the expected super-profit from the use of the intellectual property.[129] The absorption cost approach is used to deduct both variable and a portion of fixed costs from the infringer's net sales. The degree of fixed costs to be absorbed is subject to all the usual arguments. The "normal" profit margin is that which would likely have been realized by the infringer if it had sold similar products without infringing the intellectual property. Some or all of the remaining amount ("super-profit") is then awarded to the rights holder as a reasonable royalty.

[127] Goldscheider, R. *The Classic 25% Rule and the Art of Intellectual Property Licensing* 2011 DUKE L. & TECH. REV.6.

[128] See Goldscheider, *ibid.,* at footnote 23.

[129] This approach was originally used upon appeal in *Georgia-Pacific Corp. v. U.S. Plywood-Champion Papers, Inc.* 446 F.2d 295, 170 U.S.P.Q. 369 (2d Cir 1971), and has been used or referred to in a number of cases including *Panduit, Tektronix Inc. v. U.S.* 552 F.2d 343, 193 U.S.P.Q. 385 (Ct. Cl. 1977), *Paper Converting Machine v. Magna-Graphics* 745 F.2d 11, 223 U.S.P.Q. 591 (Fed. Cir. 1984) and *TWG Mfg. Co. v. Dura Corp* 789 F.2d 895 at 899 (Fed. Cir. 1986).

This approach attempts to split the profits between the plaintiff and the defendant while allowing the defendant to keep a normal level of profits. The practical problem is the determination of what a "normal" profit margin is. The approach must balance the margin that is normal to the defendant and that of the industry in question. It can be difficult to define precisely in what industry or market the infringement is taking place. Even within an industry, there is a wide discrepancy in profit margins, often by almost an order of magnitude. Furthermore, large companies with many product lines may well have large differences in profitability between individual products that relate only in the aggregate to the overall profitability of the company. The logic of this approach suggests that the court will need to apply the infringing defendant's normal profitability of the individual profit line, and not the profitability of the company.

Notwithstanding the foregoing, the plaintiff's normal profit margin is not determinative where an open market bidding process for the licence would produce a higher implied royalty rate. That is to say, the plaintiff should enjoy the higher of the market royalty rate and that which would be paid by the infringing defendant based on the analytical approach.

This analytical approach has three potential pitfalls:

(i) It ignores the cost or contribution of all other complementary assets unique to the business of the infringer.

(ii) It leads to erroneous results when the "normal" profits include the use of other intellectual property. For example, suppose a company is found liable for infringing the trade-mark of a well-known soft drink. Finding the "normal" level of profit by looking at the profits of Coca-Cola, Pepsi, and Cadbury-Schweppes would be unfair to the plaintiff, because these companies all have established trade-marks themselves. If the profits of other intellectual property are used to find a normal profit level, the calculation will in effect assume that the infringing company, in the absence of the infringement, would have had legal access to a valuable trade-mark for its products.[130]

(iii) It ignores the alternative licensees or internal alternatives available in the marketplace. The analytical approach takes as its baseline the profits made by the infringing company. However, if the licensing company had more lucrative options in the marketplace to exploit the intellectual property than hypothetically licensing the defendant, the award should restore the plaintiff to that higher level. The analytical method thus has the added danger of under-compensating the rights holder. Commonwealth case law has a greater focus upon the market than is implied by a narrow "hypothetical negotiation" test. All the opportunities for licensing to other companies should be evaluated in determining the

[130] Recognizing these limitations, Parr, *supra* note 124 at 159-162, suggests that the "normal profit margin" be replaced by a "commodity product profit margin", where the commodity product margin should be derived from a product that: (1) lacks intellectual property, 2) requires a similar amount of investment in complementary assets, and (3) is in the same (or a closely similar) industry as the infringing product.

reasonable royalty.

The analytical method is different than the investment method (discussed below). It is less comprehensive and, because it focuses on historical costs, does not directly take into account market values. However, when most comprehensively computed, a "normal profit margin" begins to look like economic profit and that, in turn, begins to move towards the result produced by investment return analysis.

3.3.3.3 Investment Return Analysis: The Economic Return from Intellectual Property[131]

One approach to the estimation of reasonable royalties (or the negotiation of licences in general) is to determine the royalty rates that will provide an appropriate return on the hypothetical licensee's assets that are contributed to the licensing relationship. Excess return resulting from use of the intellectual property or licence should be available to pay the reasonable royalty.

The primary focus of such an approach is the determination of the maximum royalty rate that will leave the hypothetical licensee with the minimum acceptable investment rate of return on its overall company assets – perhaps the most pertinent factor that drives a reasonable royalty rate.

A commonly accepted standard for a company's minimum return on assets invested is its weighted average cost of capital (WACC). The WACC is the return needed to service the economic capital required by the firm. It is sufficient to service the notional debt and provide a fair rate of return on invested equity.

Note that the licensee's assets in question – the company's assets in the WACC analysis – are all assets including goodwill and other rightly owned intellectual property.

WACC is objectively determinable and is independent of the actual debt and equity of a particular firm. It is a function of the optimal capital structure of the particular firm which in turn is a function of a broad diversity of market and industry factors as well as considerations unique to the firm such as culture, management, and other company-specific risks.

For example, assume that "Infringer" is a division of a large company. Assume that Infringer's sole product line infringes a patent claiming subject-matter essential to the whole product line.

[131] The analysis for this section is largely based on Smith & Parr, *supra* note 124; Parr, *ibid.*; and R.L. Parr, "Advanced Royalty Rates Determination Methods", in R. Parr and P. Sullivan, Eds., *Technology Licensing* (Toronto: John Wiley & Sons, 1996).

Assume the following about Infringer:

(i) Enterprise value (comprising debt and equity) of $40 million;

(ii) A WACC of 11.25 percent implying it is entitled to a "normal" after tax income of $4.5 million; and

(iii) Actual sales of $1 billion and income of $7 million after tax or a premium of $2.5 million after tax, or, say, $4 million pre-tax, or 0.4 percent of sales.

As may be seen from this analysis, the royalty of 0.4 percent is only a derivative calculation. What is essential is the number of dollars that ought to have been captured by the royalty. If the sales of Infringer had been $40 million and everything else the same, then the $4 million of profit in excess of normal profit (often referred to as super-profit) would give rise to a maximum royalty rate 10 percent. This is the maximum as, should the licensee be required to pay over, by way of royalty, the full extent of the excess profit, then there would be no incentive for it to enter into the licence arrangement.

One of the arguments that can be put forward against the above methodology is that the required return on intellectual property embedded in the WACC includes a profit to which Infringer is not entitled. If this is the philosophy of the law, then the royalty would be no less than the 10 percent computed above and the required return may be reduced to a lower level and the royalty consequently increased.

Note how the above analysis has focused solely on the Infringer or notional licensee. Given that the calculation is for damages and not profits to be disgorged, it is also important to look at the circumstances of the rights holder or plaintiff and assess its operating reality.

The estimated $4 million pre-tax per annum royalty might be reasonable as a starting point. It might be a reasonable ending point if the plaintiff's damages cannot be directly computed.

If the plaintiff has set up all the necessary assets to manufacture and sell the product itself and all such assets were sitting idle as a result of the infringement – that is to say there was no mitigating use for them then the above computed royalty may not be needed as there is a direct means of computing damages – or if it is adopted as the compensatory mechanism then it needs to be reconciled to the return the plaintiff would have otherwise enjoyed but for the infringement. Put another way, the investment return analysis is perhaps an appropriate method only in situations where the plaintiff would not itself have exploited the intellectual property at issue by selling the product itself.

4.0 Other Considerations

4.1 Reasonable Compensation for Pre-Grant Damages

Under s. 55(2) of the Patent Act,[132] a patentee is eligible for "reasonable compensation" for any damage sustained between the date the application is laid open and the date of the grant of the patent for any activities that would have constituted infringement of the patent had it been in force.

In *Jay-Lor,* Snider J. held that a patentee is not entitled to claim its lost profits as "reasonable compensation". Instead, she equated that term to "reasonable royalty" as understood in the context of post-grant damages. Snider J. did not exclude the possibility that "reasonable compensation" might be interpreted to mean something other than reasonable royalty, but no other alternatives had been argued before her.[133] As Snider J. clearly rejected a claim for lost profits under that head, unless future decisions take issue with this interpretation and offer a better alternative, it appears that a patentee's damages will be confined to a reasonable royalty during the laid open period. To put this in context, one needs to refer to the result in *Baker Petrolite Corp. v. Canwell Enviro-Industries Ltd.,*[134] in which Gibson, J. confined the patentee to nominal compensation of $1. While these two cases can be formally reconciled, as the express basis for Gibson J.'s holding was that no damages had been proven, it is not clear that the evidentiary bases were in fact significantly different. Thus while *Jay-Lor* does not allow the patentee to recover lost profits during the laid open period, in allowing the patentee to recover a reasonable royalty, it goes beyond the purely nominal award in *Baker Petrolite.*

4.2 Increased Costs in the Context of Reasonable Royalties

As previously noted, unrecovered increased costs as a result of competition from an infringer can be claimed in a claim for lost profits. However, such increased costs are not normally claimed in conjunction with a claim for a reasonable royalty because competition between the licensor and licensee should be explicitly considered under all three methods described above. To award damages for these costs under a separate head would therefore amount to double counting.[135]

4.3 Reasonable Royalties on a Cost Basis

A common method for determining the value of assets is the cost, or replacement cost, approach, which values the asset by assessing how much it would cost to reproduce the future benefits from the asset. For intellectual property, however, this approach is often described as inappropriate for a number of reasons:

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[132] *Patent Act,* R.S.C. 1985, c. P-4.

[133] *Jay-Lor, supra* note 8, at 122.

[134] *Baker Petrolite Corp. v. Canwell Enviro-Industries Ltd.,* [2002] 2 F.C. 3, 13 C.P.R. (4th) 193 reserved on other grounds 2002 F.C.A. 158, 17 C.P.R. (4th) 478.

[135] *Jay-Lor, supra* note 8, at 180-81.

(i) All of the direct and indirect development costs expended to produce intellectual property are very difficult to define and equally difficult to track.

(ii) The development costs for a given intellectual property asset may bear no relation to the asset's future economic return.[136] The true cost of the creative process might genuinely be very low. Equally, it might be better calculated as the accumulated cost of all the company's prior failures.

(iii) Reproduction cost is only one indicator of value.

As a result, there is a strong argument that the cost of development of the intellectual property should not have a significant impact on the determination of a reasonable royalty. As noted by Goldscheider:

> An argument sometimes raised by a proprietor when it is offering an invention for licence is that it has expended enormous time, effort, and money to create and develop the technology involved. A realistic counterargument is that these are sunk costs to the licensor that are irrelevant to the licensee, who is only interested in the future profitability the technology is likely to generate. The elephant may have laboured long and brought forth a mouse — and it is only a mouse that is on the table.[137]

4.4 Non-Confiscatory Royalties

An interesting alternative to the traditional damages and accounting of profits awards arose in *Unilever PLC v. Procter & Gamble,* where Muldoon J. sought to reconcile an avoidance of the difficulties of an accounting of profits with the reluctance of plaintiffs to reveal sensitive information to prove their damages by awarding damages "calculated upon a generous, but non-confiscatory, rate of royalty."[138] His reasoning is best explained in an unrelated ruling on a motion in the Scientific Games case:

> [Accounting of profits is a difficult remedy, and should be avoided where possible. However, some commentators object to this because] when patentees are limited to a remedy in damages, they may thereby be obligated to disclose to the infringer, possibly a competitor in trade, information which could prove compromising to the patentee's business. But such would not be the case at all if damages were equated to royalties which could be, in the Court's discretion, non-confiscatory or indifferent as to whether confiscatory or not. Then no disclosure would be needed from the successful plaintiff. It would be up to the defendant to prove at what level royalties would be confiscatory or not.[139]

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[136] For example, in the 1950s, the U.S. government spent approximately $100 million researching nuclear-powered aircraft, which were never able to develop enough thrust for takeoff. The future economic value of aircraft engine technology that fails to fly is presumably zero. See Parr, *supra note* 124, at 173.

[137] See Goldscheider, *supra* note 125, at §10.03.

[148] *Unilever PLC v. Procter & Gamble Inc.* (1993), 47 C.P.R. (3d) 479, at 572 (F.C.T.D.). The award was set at an amount greater than a reasonable royalty as compensation for the non-issuance of an injunction against the defendant.

[139] *Scientific Games Inc. v. Pollard Banknotes Ltd.* (1997), 76 C.P.R. (3d) 22, at 33-34 (F.C.T.D.).

The award in the *Unilever* case was upheld by the Federal Court of Appeal, which explicitly recognized that the award could be higher than the maximum royalty the defendants would have accepted in a hypothetical negotiation:

> Here, the respondents asked the trial judge to award the equitable remedy of accounting for the profits earned by the appellants by reason of their infringement….For their part, the appellants asked that the award be limited to what they would have had to pay if, instead of infringing the patent, they had become licensees of the patentee. For the reasons which he gave, the trial judge chose a middle ground. That choice is not prohibited by authority or language of s. 55(1) of the [Patent Act] and, in my view, is consistent with that language.[140]

It should be noted that the "generous, but non-confiscatory rate of royalties" in *Unilever PLC v. Procter & Gamble* is likely not equivalent to a reasonable royalty. Typically, a reasonable royalty is struck as the midpoint within a reasonable range of royalties. A "generous, but non-confiscatory rate of royalties" might be at the high end of the range, although not so high as to be an unreasonable award.

It is unclear whether the generous, non-confiscatory royalty award is limited to cases where a reasonable royalty normally applies.[141] If not, this remedy's floor of reasonable royalties potentially over-compensates the plaintiff, while its ceiling of the defendant's profits potentially under-compensates it.

Finally, from a theoretical point of view, this award also begins to lose contact with the principle of restoration. The award appears to simply find a monetary amount within the range of possible awards, while possibly approximating neither an accounting of profits award nor a restorative award.

4.5 Damages Under Section 8 of PM(NOC) Regulations

Under the Patented Medicine (Notice of Compliance) Regulations ("the Regulations"), a generic pharmaceutical company seeking a Notice of Compliance ("NOC") on the basis of an Abbreviated New Drug Submission which compares its drug to a previously approved drug, must address all the patents listed on the Patent Register in respect of that previously approved drug before its NOC will be issued. If the generic wishes to launch prior to expiry of the listed patents, it must allege its product will not infringe the listed patents, or that those patents are invalid. The patentee may respond to this allegation by seeking an order of prohibition preventing the Minister of Health from issuing the NOC. An application for an order of prohibition

[140] *Procter & Gamble v. Unilever PLC* (1995), 61 C.P.R. (3d) 499, at 523-524 (F.C.A.). In contrast to the American and Federal Court of Appeal decisions, Falconer J. in the reference in *Catnic, supra* note 6, at 532-533, appeared reluctant to follow through on this reasoning, and instead focused on what the licensee would have agreed to pay.

[141] In *Unilever, supra* note 138, the plaintiff did not market the substance of its invention in Canada, and so would not have been eligible for a lost profits award in any case.

triggers an automatic 24-month stay preventing the grant of the NOC until the listed patents have been addressed. Under section 8 of the Regulations, a generic whose NOC has been delayed by an application for an order of prohibition may bring an action for damages against the patentee that brought the application if the application is dismissed by the court or discontinued by the party bringing the application.[142] The patentee is liable for "any loss suffered during the period (a) beginning on the date, as certified by the Minister, on which a notice of compliance would have been issued in the absence of these Regulations, unless the court concludes that ... a date other than the certified date is more appropriate; and (b) ending on the date of the withdrawal, the discontinuance, the dismissal or the reversal".

The Federal Court of Appeal has held, with one caveat, that the standard "but for" approach to causation is applicable in assessing damages under section 8: "The Federal Court [has] to assess [the generic's] damages on the basis of a hypothetical question: what would have happened had [the patentee] not brought an application for prohibition?"[143] In the first decisions to assess section 8 damages, Snider J. strictly applied this "but for" approach, stating "I must construct a hypothetical, or 'but for', world during a defined period of time in the past in order to determine what share of the [drug's] market [the generic] would have captured had it been able to sell its generic [version of the drug]."[144] Applying this "but for" approach requires a detailed factual inquiry into both the capacity of the generic to produce the drug, and the market share it would have captured. Snider J. held that in constructing the "but for" world, the possibility of multiple generic entrants and the possibility of entry by an authorized generic, must both be considered.[145] In considering the sales that would have been captured by the generic, Snider J. relied extensively on detailed econometric evidence, as well as expert accountants who prepared the final damages calculation.[146]

There is one caveat to the general rule that damages under section 8 are to be assessed on the basis of "but for" causation. The Federal Court of Appeal has held that that the damages pursuant to section 8 are not to include an amount in respect of losses beyond the delay period, such as lost sales during the period in which actual sales are "ramping up" to steady state levels and possible lost sales from a

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[142] Under the Regulations, a drug manufacturer may list patents it holds that cover a drug product (for which it has already received a Notice of Compliance or NOC) on the Patent Register. If a second company (often a generic drug company) submits an abbreviated new drug submission seeking an NOC for the same drug product, it must either agree to wait for the expiry of the related patents on the Register or allege that the patent will not be infringed by their drug product, is invalid, or improperly listed. If the drug manufacturer wishes to contest the allegation(s), it may apply to the Federal Court under the Regulations for an order prohibiting the Minister of Health from issuing an NOC until the patent has expired. The allegations are considered by the court in an expedited fashion, but in the meantime the Minister is prohibited from issuing the NOC to the second company for 24 months or under the court decides the application. This is similar to granting the drug manufacturer an automatic interlocutory injunction.

[143] *Merck Frost Canada & Co. v. Apotex Inc.* 2011 FCA 329 at 75.

[144] *Sanofi-Aventis Canada Inc. v. Teva Canada Ltd.,* 2012 FC 552 at 5; and see similarly *Apotex Inc. v. Sanofi-Aventis,* 2012 FC 553 at 6.

[145] *Sanofi-Aventis v. Teva, ibid.,* at 123,184.

[146] See e.g. *Sanofi-Aventis v. Teva, ibid.,* at 77-106, 209-220 (econometric evidence), 221 referring to "expert accountants", and generally Part IX damages calculations using that evidence.

permanent loss of market share caused by delayed entry, as such losses are not suffered during the delay period.[147] That is, losses incurred outside the delay period are not compensable, even if they were caused by the delay.[148] This reflects the Court of Appeal's understanding of Parliament's intentions in enacting section 8 of the Regulations. Consequently, is assessing section 8 damages, Snider J. held that "lost business value" and "duplicate ramp-up" were not compensable losses.[149]

4.6 Interest

4.6.1 Prejudgment Interest

Interest was traditionally not awarded on damages at law, as it was thought to be punitive.[150] *A fortiori,* compound interest was not permitted. This has been statutorily remedied in each province to the extent of permitting interest to be awarded, both pre- and post-judgment.[151] While the Acts generally give broad discretion to the courts in awarding interest, many of the Acts, including both the *Federal Courts Act,* and the *Ontario Courts of Justice Act* which are substantially similar, prohibit compound interest pre-judgment.[152] The Federal Court generally does not award compound interest, and in the absence of evidence on the point, the Federal Court typically awards pre-judgment interest at the annual average Bank of Canada bank rate (the rate of interest the Bank of Canada charges on one-day loans to major financial institutions), not compounded.[153] As the bank rate is in general unrealistically low for long-term investment or borrowing, and because only simple interest is awarded, such an award will not provide full compensation to the successful party. Note that this practice is in contrast to an accounting of profits, where the general rule is to award compound interest at a rate somewhat greater than the bank rate.[154]

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[147] *Apotex Inc. v. Merck & Co.,* 2009 FCA 187, [2010] 2 F.C.R. 389 (under the Regulations as they stood prior to October 2006); Teva Canada Ltd v Sanofi-Aventis Canada Inc / ramipril (NOC) 2011 FCA 149 Dawson J.A. for himself and Noël J.A., Sharlow J.A. dissenting.

[148] *Sanofi-Aventis v. Teva, supra,* note 144 at 270, where Snider J. states "The claimed loss—however named—falls squarely within the exceptions set out in *Alendonate* (FCA) and, unfortunately, is not recoverable."

[149] *Sanofi-Aventis v. Teva, ibid.,* at 254.

[150] *London, Chatham & Dover Ry. Co. v. South Eastern Ry. Co.* [1893] A.C. 429 (H.L.).

[151] See generally M.A. Waldron, The Law of Interest in Canada (Scarborough: Carswell, 1992).

[152] See *Federal Courts Act,* R.S.C. 1985, c.F-7, s. 36-37 and s. 36(4)(b) "Interest shall not be awarded under subsection (1), (b) on interest accruing under this section"; *Courts of Justice Act,* R.S.O. 1990, c. C.43, s. 128-129 and ss 128(4)(b). The *Federal Courts Act* provides that if a cause of action arises solely in one province (i.e. infringement occurs entirely and only in one province), the laws of that province govern the award of interest, and otherwise the provisions of the *Federal Courts Act* are applicable: Federal Courts Act, R.S.C. 1985, c.F-7, s. 36-37.

[153] See *Merck & Co., Inc. v. Apotex Inc.* 2006 FC 524 [240] affm'd 2006 FCA 323; *Laboratoires Servier v. Apotex Inc.* 2008 FC 825, 67 C.P.R. (4th) 241 affm'd 2009 FCA 222, 75 C.P.R. (4th) 443; see also *AlliedSignal, supra* note 37, at 190-91, awarding simple interest at rates established in the Ontario Gazette.

[154] See "Accounting of Profits in Intellectual Property Cases in Canada" *supra,* note 15; and see *AlliedSignal, ibid.* at 190 expressly contrasting damages and an accounting of profits.

In *Bank of America Canada v. Mutual Trust Co.*[155] the Supreme Court recognized that interest is not punitive, but compensatory, and held that "the common law now incorporates the economic reality of compound interest. The restrictions of the past should not be used today to separate the legal system from the world at large."[156] Further, the Court also recognized that compound interest is required to provide full compensation, and that "[a]lthough not historically available, compound interest is well suited to compensate a plaintiff for the interval between when damages initially arise and when they are finally paid."[157] The Court held that the prohibition on compound interest under the *Ontario Courts of Justice Act* was not applicable because the interest was being awarded on the basis of common law, not the statute.[158] The *Federal Courts Act* is the same as the *Ontario Courts of Justice Act* in the relevant provisions, so it seems clear that this conclusion applies under the *Federal Courts Act* as well.

However, the Court's decision in the *Bank of America Canada* case was limited in that the Court held that "[a]n award of compound pre- and post-judgment interest will generally be limited to breach of contract cases where there is evidence that the parties agreed, knew, or should have known, that the money which is the subject of the dispute would bear compound interest as damages."[159] On the facts, the contract in question was a contract to lend money, and compound interest was specified in the agreement itself. In other cases [compound interest] "may be awarded as consequential damages in other cases but there would be the usual requirement of proving that damage component."[160] Thus while compound interest will normally be awarded in financial contract cases, in intellectual property cases the loss and the appropriate rate of interest will have to be proven. The most significant case on point is the decision of Gauthier J. in *Eli Lilly Co. v. Apotex Inc.*[161] In that case Gauthier J. reviewed the jurisprudence, including the Supreme Court decision in *Bank of America Canada* case, and concluded that the successful patentee would be entitled to compound interest if it could be proven that this was necessary to achieve full compensation.[162] Because that proof was not available to her, she awarded only simple interest at the bank rate, but left it open to the patentee to establish a higher rate, including compound interest, on the reference.[163] Gauthier J.'s holding on this point appears to be clearly consistent with the *Bank of America Canada* decision. It remains to be seen what kind of proof will be required to establish an entitlement to compound interest. It seems that in the absence of at least some proof, compound interest may be denied.[164]

[155] *Bank of America Canada v. Mutual Trust Co.,* 2002 SCC 43, [2002] 2 S.C.R. 601.
[156] *Ibid.,* at 44.
[157] *Ibid.,* at 38.
[158] *Ibid.,* at 43.
[159] *Ibid.,* at 55.
[160] *Ibid.*
[161] *Eli Lilly Co. v. Apotex Inc.,* 2009 FC 991, 80 C.P.R. (4th) 1, affm'd 2010 FCA 240.
[162] *Ibid.,* at 674.
[163] *Ibid.*
[164] *Elders Grain Co. v. The "M/V Ralph Misener"* 2004 FC 1285, para. 10.

4.6.2 Post-judgment Interest

The Acts providing for the award of interest typically distinguish between pre- and post-judgment interest.[165] The *Federal Courts Act,* in particular, gives discretion to the court to set post-judgment interest "at the rate that court considers reasonable in the circumstances," and there is no specific prohibition on compound interest.[166] Further, in *Bank of America Canada,* the Supreme Court expressly held "[t]his analysis applies equally to pre-judgment interest and post-judgment interest."

Nonetheless, in *Eli Lilly v. Apotex* in 2009 Gauthier J. held that "it is well established that the appropriate rate is 5 percent, not compounded." While it is true that this has been the normal award, none of the authorities Gauthier J. cited considered the *Bank of America Canada* decision.

Eli Lilly may be contrasted with *Astrazeneca Canada Inc. v. Apotex Inc.,* a 2011 decision in which Hughes J. awarded compound post-judgment interest at a commercially reasonable rate.[167] While Hughes J. did not cite *Bank of America Canada*, his award is fully consistent with it. As there is substantial discretion in the award of post-judgment interest, it remains to be seen whether the award of Hughes J. marks a shift in practice.

Hughes J. also ruled that interest should not accrue from the date or judgment to the date costs were fixed, and also gave the applicant three weeks to pay costs from the date costs were fixed without any interest accruing.

4.6.3 Interest and Tax

Finally, where large sums are involved over an extended period of time, the benefit to the plaintiff of receiving pre-judgment interest on pre-tax damages can be substantial. The plaintiff would not normally have had the benefit of interest on pre-tax profits and, hence, care needs to be taken to derive the appropriate pre-judgment interest amount having regard to this anomaly. It is possibly most appropriate, in light of the above anomaly, that if interest is to be awarded, it should be pre-tax interest compounded on after-tax amounts—that is, the interest awarded should be such that, after taxes are deducted on the damages award, the interest component would be equivalent to compound interest on the after-tax component of damages, adjusted also for tax on that interest.

[165] *Federal Courts Act,* R.S.C. 1985, c.F-7, s. 37(2).
[166] *Eli Lilly v. Apotex, supra* note 161, at 675.
[167] *Astrazeneca Canada Inc. v. Apotex Inc.,* 2011 FC 663, at 5.

4.7 Currency Exchange

The federal *Currency Act* requires that all judgments be given in Canadian dollar amounts. Thus even when damages are incurred and proven in a foreign currency, the award must be in Canadian dollars. The Supreme Court has held that in general currency must be converted as of the date of the commission of the tort.[168] This so-called “breach date” rule may be under- or over-compensatory if exchange rates have changed from the time of the breach to the time of judgment. However, in *AlliedSignal,* Heald J. held that the breach date rule was not applicable, because there was no single breach date for an ongoing infringement. He therefore converted the award at the date of judgment. Given the specific facts of the case, the later award is more fair. In a world where currency exchange rates are volatile, each case will demand a tailored solution.

4.8 Punitive Damages

Punitive or exemplary damages are not compensatory. The purpose of such an award is to punish a defendant for “malicious, oppressive and high-handed” misconduct that “offends the court’s sense of decency” and represents a “marked departure from ordinary standards of decent behaviour.”[169] The Supreme Court set out the circumstances whereby punitive damages may be awarded in *Honda Canada Inc. v. Keayes,* in which Bastarache J. said “punitive damages are restricted to advertent wrongful acts that are so malicious and outrageous that they are deserving of punishment on their own.”[170] Punitive damages are in principle available in Canada in intellectual property cases, including patent and copyright infringement.[171]

Punitive damages will only be awarded when compensatory damages and other normal civil remedies are insufficient to accomplish the objectives of deterrence and denunciation of wrongful conduct.[172] Historically, punitive damages have very rarely been awarded in patent cases. The mere fact of knowing or intentional infringement has been held to be insufficient to justify an award of punitive damages.[173] The reluctance to award punitive damages may also be because there is frequently some legitimate uncertainty as to the validity of a patent and/or the scope of its claims until it is tested in court, so that even willful infringement of a granted patent has seldom been considered in Canada to be oppressive or malicious.[174] The decision of Cullen J. in *Lubrizol*[175] awarding $15 million in punitive damages is the exception that proves the

[168] Established by the Supreme Court of Canada in *Custodian v. Blucher,* [1927] 3 D.L.R. 40 (S.C.C.) and *Gatineau Power v. Crown Life Insurance,* [1945] S.C.R. 655.

[169] *Whiten v. Pilot Insurance,* [2002] 1 S.C.R. 595, 2002 SCC 18, at 36.

[170] *Honda Canada Inc. v. Keayes,* [2008] 2 S.C.R. 362, at 62.

[171] *Lubrizol Corp. v. Imperial Oil Ltd.,* [1996] 3 F.C. 40, 67 C.P.R. (3d) 1 (Fed. C.A.) at 33.

[172] *Apotex Inc. v. Merck & Co.,* 2003 FCA 291 at 34.

[173] *Dimplex North America Ltd. v. CFN Corp.*, 2006 FC 586, 54 C.P.R. (4th) 435, at 123.

[174] Punitive damages were awarded at trial in *Polansky Electronics Ltd. v. AGT Ltd.,* (1993), 3 C.P.R. (4th) 34 (Alta. Q.B.), at 62-64, rev’d. on other grounds (2001), 11 C.P.R. (4th) 7 (Alta. C.A.). However, it should be noted that the Alberta Queen’s Bench is an unusual venue for patent litigation, and this should not be considered as reflective of Federal Court practice.

[175] *Lubrizol Corp. v. Imperial Oil Ltd.* (1994) 58 C.P.R. (3d) 167.

rule. In that case, an important aggravating factor was that an interlocutory injunction had been granted prohibiting the defendant from selling the product in question pending trial and the infringement giving rise to the punitive damages was a "deliberate, flagrant and callous disregard" of that injunction.[176] The defendant should have been aware its conduct was wrongful, not just because it was infringing a patent, which it might reasonably have believed to be invalid, but because in so doing it was disobeying an order of the court, which was applicable regardless of whether the patent was ultimately determined to be valid. The Court of Appeal affirmed the availability of punitive damages in those circumstances, while emphasizing the breach of the injunction as an aggravating factor.[177]

A further example is the decision by the Federal Court in *Eurocopter v. Bell Helicopter*[178] which recognized that an award of ordinary damages would be insufficient to achieve the goal of punishment and deterrence. In this case the Court ordered punitive damages after Martineau J. concluded that there was "clear evidence of bad faith and egregious conduct" on the part of Bell, stating that "Bell has shown no remorse and offered no excuse for its behaviour" and that Bell's assertion that it had no knowledge of Eurocopter's patent was "simply not plausible and contrary to the evidence." However, Eurocopter's damages would be low, as Bell did not make any sales of helicopters incorporating the infringed patent. The Court concluded that punitive damages were required not only to punish Bell but also to deter others from acting in a similar manner.

Punitive damages are relatively more common in copyright and trademark cases, particularly in cases in which the defendant's business model is centered knowingly selling pirated products. In such cases significant punitive awards, from $50,000 to $300,000 have been awarded.[179]

[176] *Lubrizol, ibid.,* at 4.

[177] *Lubrizol Corp. v. Imperial Oil Ltd.* (1996) 67 C.P.R. (3d) 1 (F.C.A.), at 38. The Court of Appeal allowed the appeal against the order on the basis that punitive damages could not be assessed until after general damages had been assessed, as it is necessary to know the general damages in order to determine whether additional punitive damages are necessary as a deterrent: see ibid., at 36.

[178] *Eurocopter v. Bell Helicopter Textron Canada Limitée*, 2012 FC 113, at 417-456. At the time of publishing this article, the decision is under appeal by Bell to the Federal Court of Appeal, so *Eurocopter* may not be the last word in punitive damages in patent infringement cases.

[179] See *Microsoft Corporation v. 1276916 Ontario Ltd.,* 2009 FC 849, at 45-49 for a review of the cases.

4.9 Nominal Damages

In cases involving pirated trade-marked or copyrighted goods, it may be difficult to establish the plaintiff's lost profits, because it may not be plausible that a person who knowingly bought a "knock-off" would otherwise have bought the genuine article.[180] At the same time, it may be difficult to establish defendant's profits, as such defendants often do not keep records, and may not appear to defend the action. In such cases the courts have awarded so-called "nominal" damages. These are not "nominal" in the sense of being a trivial sum that serves only to signal that the plaintiff's right has been infringed. Rather, they are substantial damages set on a fixed scale that is not directly related to the loss suffered by the plaintiff. In a 1997 decision the Federal Court applied the following scale: $3,000 where the defendants were operating from temporary premises such as flea markets; $6,000 where the defendants were operating from conventional retail premises; and $24,000 where the defendants were manufacturers and distributors of counterfeit goods.[181] Those amounts are subject to adjustment for inflation.[182]

5.0 Conclusion

The determination of damages or profits in a patent case, or indeed any intellectual property case, can be complicated, particularly if the matter is hotly contested between two parties willing to commit considerable resources to litigation. The assessment involves the argument of hypotheticals, and arguments can involve complex market and economic analysis.

In assisting the courts in this task, participants might be guided by the eternal advice to "keep it simple", but should also be mindful of essential business economics underlying damages calculations.

[180] *Louis Vuitton Malletier S.A. v. Yang* 2007 FC 1179, at 31.

[181] *Nike Canada Ltd. v. Goldstar Design Ltd.* et al., T-1951-95, unreported, (F.C.T.D.), cited in *Louis Vuitton Malletier S.A. v. 486353 B.C. Ltd.,* 2008 BCSC 799, at 57, 61-62. Nominal damages are normally awarded in relation to the execution of an Anton Piller order, on a per infringement basis.

[182] *Louis Vuitton, supra* note 180, at 43.

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